

Annual Report

2012-2013



Specialized Knowledge Promotes Creativity

Tezpur University
Napaam, Tezpur 784028, Assam

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5 November 2013

Expression of the Vice Chancellor



Professor Mihir K. Chaudhuri, FASc, FNA
Vice-Chancellor

With the turnaround of the reckoning year 2012-13 it is time to present the highlights of our major activities and achievements. While the academic activities – teaching and research – have been on track, some of the newly established centres like the CHANDRAPRABHA SAIKIANI CENTRE FOR WOMEN'S STUDIES (CSAWS) and CENTRE FOR ASSAMESE STUDIES (CAS), for instance, have also been working in tandem with other centres to catch up. The CSCWS has been concentrating on the promotion of studies on women belonging to diverse socio-cultural milieu of North-East India and assimilation of women from marginalized group through outreach activities including field studies, advocacy and relevant workshops. The CAS has been engaged in chosen areas relevant to the Centre including publishing an anthology of scholarly essays on the life and works of Sahityarathi Lakshminath Bezbarua to commemorate his 150th birth anniversary. In addition, the University is awaiting clearance of the UGC to establish a Centre for the Preservation of Endangered Languages of the North-East for which the papers have already been submitted to. The University's Equal Opportunity Cell (EOC) maintained a packed time-table to conduct CSIR/UGC NET coaching; a Four-month Certificate Programme on Communicative English for Army Wives; Workshops on Research Methodology in Social Sciences for College Teachers in collaboration with OKDISCD, Guwahati; a Capacity Building Programme for the Faculty and Research Scholars of the University; a One-Day Basic Training Programme on Human Rights for NSS Students of the University; and a Video Conferencing with the American Centre in Kolkata for Research Scholars of HSS. Interestingly, this Cell generally generates quite a bit of its finance from sponsors like ICSSR, Human Rights Commission, etc.

The University's endeavor to establish Chair Professorship has led to setting up of three such Chairs, namely, Srimanta Sankardeva Chair, IPR Chair and Lokapriya Gopinath Bordoloi Chair. The first and the second Chairs are operational with the IPR Chair conducting workshops, outreach programmes and creation of awareness on IPR. A few credit courses are also offered for the benefit of our students and research scholars. Furthermore, it takes care of all issues relating to IPR of our University. The process for filling up the Lokapriya Gopinath Bordoloi Chair is at its final stage. Two other centres,

namely, the Centre for Disaster Management and the Centre for Open and Distance Learning have been active in their domains.

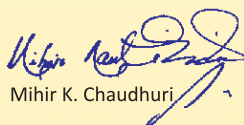
The University is well aware of its commitment to cutting-edge research in addition to providing quality teaching. To this end, all laboratories, the library and computer centres have been carefully maintained and upgraded from time to time. In order to facilitate teaching and research, cleanliness and hygiene has been well maintained on our University campus having a population of nearly five thousand people. The University is also conscious about the uninterrupted supply of power as well as potable water.

Sustained encouragement has resulted in 450 research publications with some published in high profile journals; 66 books and book chapters; and 128 conference proceedings. One patent has been granted and several have been filed for. While the University's humble efforts in promoting research in the institution have continued, colleagues on the faculty have so far earned 184 sponsored projects. An amount of nearly ₹18 crore has been received from different sponsoring agencies like UGC, DST, DBT, DAE, DIT, AICTE, for instance, during the year under report. Our DBT Nodal Cell has been actively involved in the development and up-gradation of the infrastructure of medical colleges in the North-Eastern States. The Cell also assists in promoting DBT's MD/MS programme for young doctors. There has been a constant rise in our students' performance in the national level examinations like NET and GATE. While nearly 110 students have qualified NET; 130 students have earned valid GATE scores with some of them securing very high positions. The enrolment in the University is approaching 3000.

Many of our faculty members and senior staff have been involved in a number of state and national level educational and research related planning and promotional activities. As a member of the delegation, Professor Mihir K Chaudhuri visited Washington in mid-2012 for the India-US Higher Education Dialogue. He has been also a member of the Indian Team for the UKERIE programme. Several members of our faculty have been on international research collaboration, while the University has an active university level collaboration with the University of Nottingham, UK.

An institution of higher learning requires adequate infrastructural facilities in order to achieve heights in the domain. To this end, the University is continuing its developmental programmes during the XII Plan which began with effect from 1 April 2012. Being a residential institution, Tezpur University has constructed several girls' and boys' hostels and residential quarters enabling all students and many faculty and staff members reside on the campus. The construction of the Kendriya Vidyalaya building on our premise is nearly 75% complete. It is targeted that the newly constructed school building will be occupied sometime during the next reporting year.

I acknowledge all support that has been received from our students, members of faculty and staff, and of course from the UGC and MHRD.


Mihir K. Chaudhuri

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TEZPUR UNIVERSITY

The year 2012-2013 was significant for Tezpur University on several counts. The University moved onto its Nineteenth year on January 21, 2013. The University entered into the Twelfth Plan Period with the commencement of the financial year 2012-13. It is pertinent to state here that the University was lagging behind in creating the required infrastructure during the previous Plan Periods: despite its best efforts the outcome was not up to the desired level. However, with pro-active planning and action, the University had obtained more funds from the UGC towards Development Grant for the Eleventh Plan period (extended) and could achieved about 65% of the targeted goals. Constant monitoring of the progress of the work and scientific management enabled the University in proper and timely utilization of the entire amount of the allocated grants. The University maintained strict fiscal discipline during the period and was committed to the submission of its Annual Report and the Audited Accounts to the Parliament well in advance of the dead line set by the Ministry of Human Resource Development, Government of India and the University Grants Commission.

After the XI Plan period was over, the University submitted its XII Plan proposal to the UGC for an estimated amount of Rs 43458.51 lakhs and Rs 60336.23 lakhs, respectively, for Scenario I and Scenario II. The University is a completely residential one so that there is a constant demand for more infrastructure towards accommodation for the students as well as the Teaching and the Non-Teaching staff. Ninety Residential Units for the Teaching and the Non-Teaching Staff and 763 Units of hostel accommodation for the students (316 for girls; 447 for boys) were created during the year.

Apart from these, the Administrative Building was extended to accommodate the offices of Tezpur University Entrance Examination (TUEE), International Quality Assurance Cell (IQAC) and of International Affairs.

Filling up of teaching positions with quality manpower is a challenging task. The University made all its efforts to fill in the vacant positions during the year. To this end, 36 faculty positions were filled in. Out of this, 2 appointments were made for positions reserved under the Scheduled Caste (SC), 4 under the Scheduled Tribe (ST), 6 under the Other Backward Classes (OBC) categories. In spite of the repeated efforts, the University failed to fill in 17 faculty positions under the reserved categories of SC, ST and PWD. 25 Non-teaching positions were filled in during the year. This includes 3 positions reserved under the SC; 2 under ST and 9 under the OBC. The total number of Faculty members and Non-Teaching Staff stands at 213 and 257, respectively, as on 31 March, 2013.

As on 31/03/2013 the total number of teaching positions was 249 and that of non-teaching positions was 272, with the teaching to non-teaching ratio being 1:1.09. Being a Science & Technology biased University, a large chunk of non teaching staff is technical support staff in the academic Departments. The ratio of technical to non-technical non- teaching staff is 1:1.92.

During the year under report, the UGC approved the University's proposal for establishment of Srimanta Sankardeva Chair in the University. As per UGC guidelines a Search Committee was constituted and the Committee recommended a name for consideration for appointment to the Chair.

The University admitted 3059 students to sixty academic programmes during the year. Total number of students as on 31/03/2013 on all programmes was 2813. The University launched 6 new academic programmes during the year. Three Departments were selected under the UGC's Special Assistance Programme (SAP) (DRS-I) during the year. With this the number of Departments under the UGC SAP (DRS-I) has gone up to 9. The University has 6 Departments under the FIST programme of the Department of Science & Technology, Government of India. The University implemented the academic reforms of the Government of India and extended the provision of Inter Departmental Credit Transfer (20%).

All preparations for commissioning of the Distance Education programme in line with the policy guidelines of the MHRD, Government of India, have been made. During the year a Team of the Distance Education Council, Government of India visited the University for assessment of the centre for Open and Distance Learning towards

consideration of its approval of the University programmes under distance education mode. The University is awaiting completion of the formalities by the Distance Education Centre.

There was considerable strengthening of the research infrastructure for research in science and engineering at the University during the year. The Central Sophisticated and Analytical Instrumentation Centre (SAIC) was thus organized with installation of a Single Crystal X Ray Diffractometer, a Raman Spectrometer, an Atomic Absorption Spectrophotometer, a Powder X Ray Diffractometer, a BET Instrument, etc.

The faculty members earned 41 (forty one) Extra Mural Projects worth Rs 17,47,68,000/- (Rupees seventeen crores forty seven lakhs sixty eight thousand five) only from different agencies (India) which also includes 2 International Projects, during this period. Faculty members from different Departments of the University have successfully completed many consultancy projects of different organisations during the period. Further, faculty members are also conducting many collaborative projects with reputed institutions in India and abroad.

A Microsoft Innovation Centre (MIC) has been established in the University as per an Memorandum of Agreement between the University and the Microsoft Company to give scope for innovative activities among the students.

The University continued to carry on various extension and awareness activities in keeping with its commitment to the society and people at large, through the Equal Opportunity and Career Counseling Cell, and Outreach Programme Committee. A number of programmes have been organized by the Cell relating to Disability, Human Rights, Inclusive Social Development, Gender Inequality, Health Camps at several neighborhood villages, Research Methodologies for Social Science, NET Coaching, etc. A good number of out reach programmes have also been organized by the Out reach Programme Committee amongst the fringe villagers. The University has a very active NSS and NCC units which are also involved in various extension activities and social services.

As part of the State Government's programme *Gyan Yatra*, the University has been organizing various visits for school and college students to various academic departments. In these visits, Awareness Lectures on academic programmes of the University and Career Counselling are also organized for the benefit of the visiting students.

Special drives were made to inculcate the habit of reading amongst the students and make the best use of the library facility in the University. The library opening hours have been extended on requests from the students till 12 midnight. The library users can access the library information system from any terminal from within the campus. There are altogether 57450 titles of books, 5084 back volumes of journals, 149 print subscribed journals, 11 on line databases, 9089 e-journals through the UGC- Infonet consortium and 917 e-journals and 1 database through the DelCon DBT, Government of India and 1750 CD- ROMs and 81 VCDs in the library.

The University is Planning more activities in the coming year during the XII plan.

THE UNIVERSITY ADMINISTRATION

The University administration provides the management support platform for smooth operation of the teaching, learning, research and extension activities of the University. The administration constantly strives for incorporating and internalizing the contemporary concepts and practices of modern governance in all aspects of its functioning. The administration endeavours to ensure effective execution of the academic and administrative reforms through e-governance with transparency, information sharing, vigilance, accuracy and inclusive mechanism ensuring participatory decision making involving all stake holders from within and outside the University.

The University functions within objects and mandate depicted in its Act and as governed by its Statutes and Ordinances. The rules, regulations and directives of the Government of India, which have relevance mostly to academic matters and are communicated through the Ministry of Human Resource Development (MHRD), University Grants Commission (UGC), and such other statutory authorities, have also an important bearing on the overall administration of the University. The administration is conducted under the following authorities.

AUTHORITIES

The Statutory authorities of the University are:

- The Board of Management
- The Academic Council
- The Planning Board
- The Finance Committee
- The Research Committee
- The School Board
- The Board of Studies
- The Building Committee

THE NUMBER OF MEETINGS HELD DURING THE YEAR 2012-13

• Board of Management	2
• Finance Committee	2
• Building Committee	2
• Academic Council	2
• Planning Board	1
• Research Committee	2

FUNCTIONS

These statutory authorities act in accordance with the powers and functions which have been clearly defined in the Act, Statutes and the Ordinances. The Board of Management is the principal executive body of the University. The Board of Management takes policy decisions as well as administrative decisions on all major issues and/or it considers the recommendations of the other statutory bodies like the Finance Committee, the Academic Council, the Planning Board, the Building Committee, and the Selection Committees, etc.

In the organizational hierarchy, the Chancellor is the Head of the University while the Vice-Chancellor is the Principal Executive and Academic Officer. There are other officers in the administrative set up, each with specific domains, assignments and responsibilities. The Vice-Chancellor exercises general supervision and control over the affairs of the University and gives effect to the decision of all the authorities of the University. The Vice-Chancellor is also the ex-officio Chairperson of the Board of Management, the Academic Council, the Finance

Committee, the Planning Board, the Research Committee and the Building Committee and the Selection Committees.

The University administration is computer intensive and has been making strategic efforts towards complete e-governance with the help of its computer centre and the department of Computer Science & Engineering.

All academic activities are implemented with strict adherence to its Academic calendar. Almost all academic reforms prescribed by the UGC and MHRD are implemented at Tezpur University.

ADMINISTRATIVE DIVISIONS

The major divisions of the University in respect of the functions are identified as:

- Academic Affairs (including examinations)
- Establishment & General Administration
- Finance and Accounts
- Campus Development
- Students' Affairs

The Administrative set-up and the key functionaries under each division are presented below.

ACADEMIC AFFAIRS

The Academic Council is the principal academic body of the University. The first Academic Council was constituted on expiry of the ten-year term of the Planning and Academic Committee. The School Board and Board of Studies formulate policy recommendations. The Deans of concerned Schools of studies, the Heads of Departments implement the decisions of the authorities.

The evaluation of students is made through the approved examination scheme and procedures. The Controller of Examinations is the nodal officer, who is responsible for organization of examinations and declarations of results. A Deputy Registrar, one Assistant Registrar and one Section Officer with a few ministerial staff help the Controller of Examinations in the work assigned to this division. The Academic Division constitutes a major division in the administration. The division is also responsible for coordinating the whole process of admission of students, preparing and implementing the academic calendar and such other tasks related to the academic affairs.

ESTABLISHMENT & GENERAL ADMINISTRATION

The Registrar is the nodal officer of the overall general administrative set-up, which functions under the control and supervision of the Vice-Chancellor. All activities viz., implementation of decisions of the University, recruitment, creation and development of physical infrastructure, academic infrastructure, purchase, welfare oriented schemes, administrative support to the research projects funded by external agencies, etc., fall within the ambit of the general administration. On the basis of diverse activities performed, the tasks are assigned to different sections under the control and supervision of designated officers including the Deputy Registrars.

The different sections under General Administration deal with the following matters.

RECRUITMENT AND PERSONNEL

Assessment of vacancies and recruitment is assigned to an Assistant Registrar who is assisted by one Section Officer. In addition, Section to deal all matters relating to personal files/service matters of the employees. Two Section Officers and three ministerial staff work under the supervision and control of the Assistant Registrar in the Establishment. Matters relating to participation in Seminar, Conference, Workshop, etc. by faculty members are look after by the General Administration under the supervision of an Assistant Registrar. Matters relating to sponsored research projects taken up by the faculty members are looked after by the office of the Dean, Research and Development.

MEETING OF THE AUTHORITIES AND FOLLOW-UP ACTION

A section under the University General Administration deals with all matters relating to notification of the meetings of the various authorities of the University, keeping records of the minutes, notification of the decisions and the committees constituted by it. A Section Officer performs the activities under the overall control of the Registrar.

TRANSPORT, GUEST HOUSE, HOSTEL AND RTI MATTERS

All matters relating to arrangement of transport for the employees and students, maintenance of the Guest House, and management of the hostels are carried out by a Deputy Registrar under the General Administration. The section also deals with the matters related to RTI.

STORES AND PURCHASE

A Deputy Registrar, assisted by a Section of ministerial staff implements the decisions of the Tender and Purchase Committee relating to matters of purchase of all store items including equipments, chemicals and consumables, furniture and stationery. This section also maintains the Central Stock Register.

ESTATE SECTION

An Assistant Registrar is assigned the responsibility of the Estate and an Assistant Horticulturist is in charge of the landscaping and garden maintenance of the University which has a 262 acre campus. The Academic Buildings, general facilities like the Central Library, Health Centre, Computer Centre, Sophisticated Analytical Instrumentation Centre, Hostels, Students Activity Centre with the Playground and evening playing facilities, Auditorium, DG Installation, Guest House, Cafeteria, Canteen, Shopping Complex, Women Study Centre, Water Treatment Plants, Botanical Garden, etc., have been developed on the campus on the basis of a Master Plan. Maintenance of the general cleanliness of the campus is outsourced to M/S Sulabh International. A Horticulture Section under the Engineering Cell looks after the landscaping and gardening activities.

FINANCE AND ACCOUNTS

The Finance Officer is the key officer of this division. This division is responsible for preparation of budget, proper management of funds, receipt and expenditure, submission of utilization certificates, compliance with financial rules in effecting all transactions in accordance with the decisions of the competent authorities. One Deputy Registrar (Finance), a Deputy Registrar (Accounts) and one Assistant Finance Officer, one Internal Audit Officer, two Section Officers and five Junior Accountants and a few support staff members assist the Finance Officer in performing the duties of this section. The Finance Division prepares the balance sheet and the accounts of the University for audit. The University has been submitting its audited accounts to the MHRD for submission to the Parliament well before the stipulated deadlines.

CAMPUS DEVELOPMENT

The work of campus development includes both creation of new infrastructure and maintenance of the existing facilities. Expansion and maintenance of facilities like buildings, roads, electricity and water supply has been a continuous process. An Associate Dean, Planning and Development provides the general guidelines for the smooth creation and operation of the major civil infrastructures on the campus. The Engineering Cell of the University is under the supervision of an Executive Engineer. He is supported by two Assistant Engineers, two Junior Engineers, a Junior Architect Engineer and a few supporting staff members, perform all these activities.

THE TRAINING AND PLACEMENT CELL

The University has a Training & Placement Cell and it interfaces between the recruiting organizations and the students. The Cell facilitates both *on campus* and *off campus* recruitments and has been organizing various pre-placement training programmes to enhance the employability of the prospective students. The University took all possible measures to give the Cell a fresh boost during the last year. It organized various pre-placement training programmes. A Deputy Director supported by Training & Placement Officer is assigned the responsibility of the Training and Placement Cell. In addition, every department has a faculty-in-charge, Training & Placement to assist the Training & Placement Cell.

STUDENTS' AFFAIRS

As part of a fully residential University, all students stay on the campus in the University hostels. The University focuses on a holistic development of the personalities of the students. All affairs related to the students including discipline, accommodation, extra-curricular activities, administration and management of the hostels, annual activities like sports events, cultural events, etc., are looked after by the Dean, Students' Welfare in co-ordination with the Wardens of the hostels, Sports Officer, Cultural Officer and the Controller of Examinations. There is a Students Council constituted through elective and selective mechanisms as per the provisions of the Act, Statutes and Ordinances.

THE EQUAL OPPORTUNITY CELL

The University has an Equal Opportunity Cell. The Cell organized a number of programmes in the form of training programmes, workshops, courses and seminars during the year. These programmes had the objective of creating awareness among the students, academics and general people about the contemporary issues of equity, gender, inclusive development and also capacity building. A number of pre-placement training programmes with the objective of enhancing the placement prospects of the students were also organized under the aegis of the Equal Opportunity and Training & Placement Cell. These trainings centered on soft skill development, enhancement of aptitudes and development of correct attitudes.

THE HINDI CELL

The University has a very active Hindi Cell manned by Hindi Officer, Hindi Translator and a typist. This Cell looks into the implementation of official languages as per GOI requirement. During the year under report, this cell organized two (2) meetings of official language Implementation Committee and one (1) workshop for Non teaching staff of the University. The cell has also organized Hindi Fortnight in the month of September 2012 with many competition for teaching and non teaching staff, students and staff children.

EXTENSION SERVICE

The University is maintaining its social responsibilities to the society in the form of extension notice also. A dedicated team of faculty members, research scholars, students and the non-teaching staff has been regularly delivering lectures to and holding demonstrations for the young school children of the neighbouring villages and towns on weekends. The lectures are popular in nature highlighting the concepts of science and technology, hygiene and health care, human rights, social awareness for education and growth, etc.

THE HEALTH CENTRE

The University Health Centre looks after the basic health care of the entire University community. The Health Centre has three full time (one of them is contractual) post-graduate Medical Officers and three Visiting Specialist Doctors. The Centre has the basic infrastructure for routine diagnosis and three Ambulances. The Centre provides 24 x 7 services for emergency patients in addition to routine OPD services.

FINANCIAL PROFILE

The Accounts of the University are maintained in four parts: *Part I* deals with Non-Plan Maintenance Grant, *Part II* deals with Plan Grant, *Part III* deals with Earmarked Specials Funds and *Part IV* deals with Debts and Deposits Accounts. The Accounts for the financial year 2012-13 has been prepared in the Common Format for Central Autonomous Bodies as prescribed by Govt. of India.

The opening balance at the beginning of the year 2012-13 was Rs 3883.02 lakhs. During the year the receipt under various accounts including Non-Plan and Plan Grant was Rs 12228.57 lakhs. Thus the total fund available during the year was Rs 16111.59 lakhs.

Total payment during the year 2012-13 was Rs 13662.89 lakhs, leaving a closing balance of Rs 3656.77 lakhs.

A. The following Statement presents the Receipt and Expenditure at a glance.

STATEMENT OF RECEIPT & EXPENDITURE 2012-13

(INR in lakhs)

RECEIPTS			EXPENDITURE		
Particulars	Amount	Total Amount	Particulars	Amount	Total Amount
A) Opening Balances			E) Expenditure		
1. Non-Plan			1) Part- I (Non –Plan)	3384.69	
Cash in hand	0.00		2) Part- II (Plan)	7944.39	
Bank balances	187.19		3) Part -III (Earmarked)	2333.81	13662.89
Advances	25.55		& Special Fund		
Investment	100.00				
2. Plan			F) Closing Balance		
Cash in hand	0.00		1. Non-Plan		
Bank balances	57.49		Cash in hand	-	
Advances	79.65		Bank balances	266.14	
Investment	594.50		Advances	57.32	
3. Earmarked Spl. Fund			Investments	0.00	
Cash in hand	-		2. Plan		
Bank balances	1239.42		Cash in hand	-	
Investments	914.92		Bank balances	512.60	
Advances	684.30	3883.02	Advances	140.75	
B) Grant Receipts			Investments	20.39	
1) Part -I (Non –Plan)	2591.21		3. Earmarked Spl.Fund		
2) Part- II (Plan)	7735.92		Cash in hand	-	
3) Part- III (Earmarked	1901.44	12228.57	Bank balances	1672.68	
& Special Fund)			Investments	586.00	
C) Internal Receipts		1014.49	advances	400.89	3656.77
D) Current Liabilities		193.58			
Grand Total		17319.66	Grand Total		17319.66

B. XII Plan Grant

During the year 2012-13, the UGC sanctioned Rs 5500.00 lakhs and released Rs 5000.00 lakhs under XII th Plan General Development Grant , Rs 108.75 lakhs for Merged scheme and Rs 200.00 lakh for Non-Net Fellowship to Phd Scholars under XII Plan. Besides the Plan Grants, the UGC also released Rs 909.64 lakh as additional Grant for General Development during XII Plan for the year 2012-13, Rs. 1000.00 Lakhs for School of Engineering and Rs. 500.00 Lakhs for School of Management. The total expenditure under XII th Plan during 2012-13 was Rs. 7944.39 lakh. (Including OBC Grant, Addl. Grant for GDG during 2012-13, 11 Merged Schemes, Non-Net Fellowship, School of Engineering and School of Management).

The Plan Grant was utilized for creation of additional infrastructure including the following:

(INR in lakhs)

SI No	Infrastructure Created and Other Expenses	Amount	Amount
A	Building against XII Plan		
	1) Const of R.C.C.-3 storied Type –B Residential Building	610.31	
	2) Const of R.C.C-3 storied Type-C Residential Building	388.21	
	3) Const of R.C.C.-3 storied Type-D Residential Building	232.80	
	4) Const of Single Bedded Boys Hostel No-8	513.60	
	5) Const. of Single Bedded Girls Hostel No-6	337.02	
	6) Const. of School Building	544.20	
	7) Extension of VCs Conference Room	12.75	
	8) Const of Acca. Building for School of Humanities of Social Sciences	755.55	
	9) Const of R.C.C.-2 storied Library Building	116.15	3510.59
B	Building against Establishment of School of Engineering		
	1) Const of RCC-3 storied Academic Building for Civil Engineering.	47.32	
	2) Const of single Bedded Girls Hostel No-6	672.10	719.42
C	Building against School of Management		
	1) Const. of Residential Building for Medical Officer	104.57	
	2) Const of Residential Building for Medical Staff	122.45	227.02
D	Building against Addl Grant under GDG XII Plan 2012-13		
	1) Const of Single Bedded Boys Hostel No -8	331.28	
	2) Const of RCC 2-storied Building for Eng Cell & COE Office	42.75	
	3) Const of R.C.C. -3 storied Type-B Residential Building	0.73	
	4) Extension of Guest House Building	20.74	395.50
	Total Expenditure under Building Head		4852.53
E	Library Books		
	1) XII Plan Dev Grant	126.04	
	2) Addl. Grant for GDG under XII Plan	4.27	130.31
F	Laboratory Equipment		
	1) School of Management	11.28	
	2) School of Engineering	121.44	
	3) Addl. Grant for GDG under XII Plan	98.50	
	4) XII Plan Dev Grant	650.51	881.73
G	Furniture		107.03
H	Sports Facilities		0.50
I	Campus Development		158.01
J	Central Facilities		10.31
K	Salary & Other Expenditure		1803.97
	Total		7944.39

C. Earmarked Special Fund

The Faculty members engaged in sponsored Projects received Rs. 1747.68 lakhs against 43 Projects & Programmes (including DBT sponsored grant for development/upgradation of infrastructure in Medical colleges in NE states) during the year 2012-13. This amount has already released to the concerned Principal Project Investigators.

Internal receipts generated by the University during the year 2012-13 were Rs. 1014.49 lakhs, which includes interest earned from banks amounting to Rs. 217.87 lakhs.

THE STATUTORY BODIES

THE BOARD OF MANAGEMENT
THE PLANNING BOARD
THE ACADEMIC COUNCIL
THE FINANCE COMMITTEE
THE BUILDING COMMITTEE

THE BOARD OF MANAGEMENT

(01/04/2012 - 31/03/2013)

Vice Chancellor

Tezpur University

Chairman

Pro Vice-Chancellor

Tezpur University

Member

Dr Mohammed Abdul Kalam

Professor and Head
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Member
(till 1.6.2012)

Prof V S Prasad

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Member
(till 1.6.2012)

Prof V Kannan

Pro Vice Chancellor and Professor
Department of Mathematics & Statistics
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Hyderabad 500046

Member
(till 1.6.2012)

Prof Ashok S Kolaskar

Vice-Chancellor
Kalinga Institute of Industrial Technology
KIIT University
Khurda 751 024
Bhubaneswar, Orissa

Member
(till 1.6.2012)

Dr Devi Singh

Director
Indian Institute of Management
Off Sitapur Road (Prabandh Nagar)
Lucknow 226 013

Member
(wef 2.6.2012)

Prof Iftekhar Ahmed

Dean
Film and Television Institute of India, Pune
Law College Road
Pune 411 004

Member
(wef 2.6.2012)

Profr Partha S Ghosh

B-10/7334, VASANT KUNJ
New Delhi 110 070

Member
(wef 2.6.2012)

Prof Birendranath Datta Chandrabala Barooah Lane 104 Gopinath Bordoloi Road Guwahati 781 003	Member (wef 2.6.2012)
Dr Lakshmi Goswami (Mrs) Goswami Nursing Home Tezpur 784001	Member
Prof M K Sharma Dean, Management Science Tezpur University	Member (till 25.5.2012)
Prof Manabendra Bhuyan Dean, School of Engineering Tezpur University	Member (from 26.5.2012 to 15.2.2013)
Prof Sunil Kumar Dutta Dean, School of Humanities and Social sciences Tezpur University	Member (wef 16.2.2013)
Prof M M Sarma Professor, Department of English & Foreign Languages Tezpur University	Member
Dr Shashi Baruah (Mrs) Associate Professor Department of Molecular Biology & Biotechnology Tezpur University	Member
Madhurima Goswami (Mrs) Assistant Professor, Department of Cultural Studies Tezpur University	Member (till 5.1.2013)
Mr Sadhan Mahapatra Assistant Professor, Department of Energy Tezpur University	Member (wef 6.1.2013)
Registrar Tezpur University	Secretary

MEMBERS OF THE PLANNING BOARD

(01/4/2012 – 31/3/2013)

Vice Chancellor Tezpur University	Ex- Officio Chairman
Pro- Vice Chancellor Tezpur University	Member
Prof S K Dutta Dean, School of Humanities & Social Sciences	Ex- Officio Member
Prof N D Baruah Dean, School of Sciences	Ex- Officio Member
Prof S S Sarkar Dean, School of Management Sciences	Ex- Officio Member
Prof D K Bhattacharyya Dean, School of Engineering	Ex- Officio Member
Prof D Deka Dean, Students' Welfare	Ex- Officio Member
Prof Charulata Mahanta Dean, Research and Development	Ex- Officio Member
Dr Utpal Kr Das Associate Dean, Planning and Development	Ex- Officio Member
<i>SIX TEACHERS NOMINATED BY THE ACADEMIC COUNCIL</i>	
Prof P K Das Department of English & Foreign Languages	Member
Prof S M Hazarika Department of Computer Science & Engineering	Member
Prof Nilakshi Das Department of Physics	Member
Dr Papori Baruah Department of Business Administration	Member
Dr Shailen Deka Department of Civil Engineering	Member
Dr Juri Gogoi Konwar Department of Cultural Studies	Member
<i>ONE REPRESENTATIVE OF MHRD</i>	Vacant
<i>ONE REPRESENTATIVE OF UGC</i>	

Prof Varun Sahni

Member

Centre for International Politics
 Organization and Disarmament (CIPOD)
 School of International Studies
 Jawaharlal Nehru University, New Delhi

*ONE REPRESENTATIVE OF NEC***Director (HRD & E)**

Member

NEC, Nongrim Hill
 Shillong- 793003

*ONE REPRESENTATIVE OF GOVT OF ASSAM***The Commissioner & Secretary**

Member

Department of Higher Education
 Govt of Assam
 Dispur, Guwahati 781006

*TWO NOMINEES BY THE BOARD OF MANAGEMENT***Prof Ranjan Chakraborty**

Member

Vice Chancellor
 Vidya Sagar University
 Paschim Midnapur
 West Bengal, Midnapur 721102

Mr R K Dutta

Member

Former Chairman cum Managing Director
 Oil India Limited (OIL)
 Kanak Building (1st Floor)
 41- Chowringhee Road, Kolkata 700071

Controller of Examinations

Permanent Invitee

Tezpur University

Finance Officer

Permanent Invitee

Tezpur University

Librarian

Permanent Invitee

Tezpur University

Registrar

Ex- Officio Secretary

Tezpur University

THE ACADEMIC COUNCIL

(01/04/2012 - 31/03/2013)

Vice Chancellor
Tezpur University

Ex-officio Chairman

Pro Vice-Chancellor
Tezpur University

Ex-officio Member

DEANS OF THE UNIVERSITY

Prof M K Sarma
Dean, School of Management Sciences

Ex-officio Member
(till 15.2.2013)

Prof S S Sarkar
Dean, School of Management Sciences

Ex-officio Member
(wef 16.2.2013)

Prof S K Dutta
Dean, School of Humanities & Social Sciences

Ex-officio Member

Prof M Bhuyan
Dean, School of Engineering

Ex-officio Member
(till 16.2.2013)

Prof D K Bhattacharyya
Dean, School of Engineering

Ex-officio Member
(wef 17.2.2013)

Professor Nayandeep Dekabaruah
Dean, School of Sciences

EX-officio Member

Professor Dhanapati Deka
Dean, Students' Welfare

EX-officio Member

Prof C L Mahanta
Dean, Research & Development

EX-officio Member
(wef 15.7.2012)

PROFESSORS AS NOMINATED BY THE VICE CHANCELLOR

Prof S K Dolui
Department of Chemical Sciences

Member
(till 29.6.2012)

Prof K K Baruah
Department of Environmental Sciences

Member
(wef 30.6.2012)

Prof Muneendra Borah
Department of Mathematical Sciences

Member
(wef 30.6.2012)

HEADS OF DEPARTMENTS/CENTRES

Prof F A Danta (Mrs) Head of English and Foreign Languages	Ex-officio Member (till 7.10.2012)
Professor P K Das Head of English and Foreign Languages	Ex-officio Member (wef 8.10.2012)
Prof P J Mahanta Head of Cultural Studies	Ex-officio Member till 14.2.2013)
Dr D P Nath Head of Cultural Studies	Ex-officio Member (wef 15.2.2013)
Prof S S Sarkar Head of Business Administration	Ex-officio Member (till 15.2.2013)
Prof Debabrata Das Head of Business Administration	Ex-officio Member (wef 16.2.2013)
Prof Debajit Hazarika Head of Mathematical Sciences	Ex-officio Member
Dr Abhijit Borah Head of Mass Communication & Journalism	Ex-officio Member (till 21.3.2013)
Prof CSHN Murthy MemberHead of Mass Communication & Journalism	Ex-officio (wef 22.3.2013)
Dr Rabin Deka Head of Sociology	Ex-officio Member (till 28.2.2013)
Dr K Kikhi Head of Sociology	Ex-officio Member (wef 1.3.2013)
Dr Utpal Sarma Head of Computer Science & Engineering	Ex-officio Member
Prof J C Dutta Head of Electronics & Communication Engineering	Ex-officio Member
Dr Shashi Baruah (Mrs) Head of MBBT	EX-officio Member
Dr Nidhi Saxena Bhattacharyya Head of Physics	EX-officio Member
Dr R R Hoque Head of Environmental Science	EX-officio member (wef 17.9. 2012)
Prof S C Deka Head of Food Processing Technology	Ex-officio Member
Prof D C Baruah Head of Energy	Ex-officio Member

Prof Niranjana Karak Head of Chemical Sciences	Ex-officio Member
Prof S M Hazarika Head of Mechanical Engineering	Ex-officio Member (till 5.6.2012)
Dr Dilip Dutta Head of Mechanical Engineering	Ex-officio Member (wef 6.6.2012)
Dr A K Dutta Head of Civil Engineering	Ex-officio Member (till 5.6.2012)
Dr Utpal Kr. Das Head of Civil Engineering	Ex-officio Member (wef 6.6.2012)
Prof A K Nath Head of Hindi	Ex-officio Member (till 3.2.2013)
Dr S K Tripathy Head of Hindi	Ex-officio Member (wef 4.2.2013)
Dr N Sarma Head, Computer Centre	EX-officio Member
Dr Dipak Nath Head, Centre for Disaster Management	Ex-officio Member

TWO ASSOCIATE PROFESSORS OF THE UNIVERSITY AS NOMINATED BY THE VICE CHANCELLOR

Mr P Ambarasan Department of Mass Communication & Journalism	Member
Dr Chandan Goswami Department of Business Administration	Member

TWO ASST PROFESSORS NOMINATED BY THE VICE CHANCELLOR

Mrs M Goswami Department of Cultural Studies	Member (till 29.6.2012)
Dr D Mohapatra Department of English and Foreign Languages	Member (till 29.6.2012)
Mr S I Singh Department of Computer Science and Engineering	Member (wef 30.6.2012)
Dr Heera Borpuzary Department of Business Administration	Member (wef 30.6.2012)

THREE NOMINEES OF THE BOARD OF MANAGEMENT

Prof K N Ganesh

Director
 Indian Institute of Science Education and Research (IISER)
 First Floor, Central Tower
 Sai Trinity Building
 Garware Circle, Sutawardi, Pashan
 Pune 411021

Member
 (till 31.7.2012)

Prof B B Bhattacharya

Vice Chancellor
 Jawaharlal Nehru University
 New Delhi 110067

Member
 (till 31.7.2012)

Prof B N Goswami

Director
 Indian Institute of Tropical Meteorology
 Dr Homi Bhabha Road, Pashan
 Pune 411008

Member
 (wef 1.8.2012)

Prof (Mrs) Maitrayee Chaudhuri

Centre for Study of Social Systems
 School of Social Sciences
 Jawaharlal Nehru University
 New Delhi 110067

Member
 (wef 1.8.2012)

Prof Kankan Bhattacharyya

Director and Senior Professor
 Indian Association for the Cultivation of Science
 2 Raja S C Mullick Road, Jadavpur
 Kolkata 700032

Member

*ONE REPRESENTATIVE OF UGC***Prof S S Mantha**

Chairman
 All India Council of Technical Education (AICTE)
 7th Floor, Chanra Lok Building, Janpath
 New Delhi 110 001

Member

*ONE REPRESENTATIVE OF THE MHRD***Prof Ranjan Chakrabarti**

Professor of History
 Department of History
 Jadavpur University
 Kolkata 700032

Member
 (till 18.8.2012)

*ONE REPRESENTATIVE OF THE NEC***Director (HRD & E)**

North Eastern Council (NEC)

Nongrim Hills

Shillong 793003

Ex-officio Member

*ONE REPRESENTATIVE OF STATE GOVT OF ASSAM***Commissioner & Secretary/Principal Secretary In-Charge
of Higher Education**

Govt of Assam

Dispur

Guwahati 781006

Ex-officio Member

Dr B Sahariah

Controller of Examinations

Tezpur University

Ex-officio Member
(till 31.1.2013)**Prof C L Mahanta**

Controller of Examinations, i/c

Tezpur University

Ex-officio Member
(1.2.2013 to 21.2.2013)**Dr Biren Das**

Controller of Examinations

Tezpur University

Ex-officio Member
(wef 22.2.2012)**Librarian**

Tezpur University

Ex-officio Member

Registrar

Tezpur University

Ex-officio Secretary

THE FINANCE COMMITTEE**(01/04/2012 - 31/03/2013)****Vice Chancellor**

Tezpur University

Chairman

Pro Vice- Chancellor

Tezpur University

Member

Dr Renu Batra (Mrs)

Joint Secretary
University Grants Commission
Bahadurshah Zafar Marg
New Delhi 110002

Member

Mr G R Raghavender

Director (BP & CR)
Department of University & Higher Education
Ministry of Human Resource Development
Shastri Bhawan
New Delhi 110115

Member
(till 18.10.2012)

C R Valsala Hariharan (Mrs)

Deputy Secretary (CU&L)
Ministry of Human Resource Development
Department of Higher Education
Shastri Bhawan
New Delhi 110 115

Member
(wef 19.10.2012)

Mr Partap Singh

Deputy Secretary (Finance)
Department of University & Higher Education
Ministry of Human Resource Development
Shastri Bhawan
New Delhi 110115

Member

Dr Bhupati Kumar Das

Managing Director
Bharat Oman Refineries Limited
A Block, Office Complex, Gautam Nagar
Bhopal 462 023

Member

Mr A G West Kharkongor

Director (Finance)
NEEPCO Limited
Lower New Colony
Shillong 793 003

Member

Prof M M Sarma

Professor, Department of EFL
Tezpur University
(Member, Board of Management)

Member

Prof A K Buragohain

Invitee
Registrar

Special

Finance Officer

Secretary
Tezpur University

Member

THE BUILDING COMMITTEE**(01/04/2012 - 31/03/2013)**

Vice Chancellor Tezpur University	Chairman
Pro Vice-Chancellor Tezpur University	Member
Mr Bani Kanta Das Chief Engineer Public Works Department (Roads) Government of Assam Chandmari Guwahati 781 003	Member
Prof Anjan Dutta Department of Civil Engineering Indian Institute of Technology (IIT), Guwahati Guwahati 781 039	Member
Superintending Engineer, PWD (Building) Tezpur Building Circle Tezpur 784001	Member
Mr D Saikia Deputy Architect, PWD Government of Assam Office of the Chief Engineer, PWD (Buildings), Assam Chandmari Guwahati 781 003	Member
Dr Lakshmi Goswami (Mrs) Goswami Nursing Home Tezpur 784 001	Member
Executive Engineer Tezpur University	Member
Finance Officer Tezpur University	Member
Registrar Tezpur University	Member Secretary

Annual Report 2012-2013
A Gist

Tezpur University
Annual Report 2012-2013
A Gist

UNIVERSITY PROFILE

Name of the University	Tezpur University
State	Assam
Address	Napaam Tezpur, 784028 Assam
Year of Establishment	1994
Type of the University	Central and Unitary

HIGHLIGHTS OF THE YEAR 2012-2013

Vice Chancellor	Prof Mihir Kanti Chaudhuri, FASc, FNA
Pro Vice –Chancellor	Prof Amarjyoti Choudhury, PhD (Oxford)
Registrar	Prof Alak Kumar Buragohain, PhD (London)

Total number of	
Academic Departments	17
Academic Centres	6
Students	2794
Female	1697
Male	1097
Teachers	213
Female	40
Male	173
Teachers (General)	171
Teachers (ST/SC)	42
Non teaching Employees	257
Female	30
Male	227
Non teaching Employees (General)	197
Non teaching Employees (ST/SC)	60
Paper published by faculty in national and international journals	450
Conference proceedings	128
Books and Book chapters produced by the Faculty	66
Patent	1
Sponsored ongoing projects:	184
Sponsored projects beginning 2012-2013	43
Grants received for the projects (2012-13)	Rs 1747.68 lakhs
Seminar/Workshops organized by various Departments	54
Seminars/Conferences attended by Faculty abroad and in India	177
Talks given by Faculty abroad and in India	141
Total number of students who qualified	NET: 104 GATE: 130

Financial Profile

The opening balance at the beginning of the year 2012-13 was Rs 3883.02 lakhs. During the year the receipt under various accounts including Non-Plan and Plan Grant was Rs 12228.57 lakhs. Thus the total fund available during the year was Rs 16111.59 lakhs.

Total payment during the year 2012-13 was Rs 13662.89 lakhs, leaving a closing balance of Rs 3656.77 lakhs.

Infrastructural Development

The following constructional activities were taken up and completed during 2012-13.

- Central Water Supply Scheme Phase-II
- Extension of the Academic Building of the Department of Civil Engineering
- Construction of Residential Buildings for Medical Officers
- Construction of Residential Buildings for Medical Staff
- Construction of Office Buildings for the Engineering Cell and the Controller of Examinations
- Improvement of existing internal roads
- Construction of public toilets

Research Collaboration at the National and International Levels

Tezpur University is working towards developing a fruitful and effective partnership in academic activities and research with universities and institutes both in India and abroad. To this end Vice Chancellor, Prof Mihir K Chaudhuri took part in the India-US Higher Education Dialogue in Washington held in June 2012. He has been also a member of the Indian Team for the UKERIE programme.

During 2012-2013 several Science and Technology and Engineering Departments of the University initiated the process of concretizing collaborative ventures at multiple levels – joint research, research scholars and students exchange programme, faculty exchange programme – with foreign Universities like; the University of Bremen Germany; Abu Akademi University, Finland; Yunnan University of Finance and Economics, China; and the University of Colorado (Colorado Springs), USA; Queen's University, Belfast. A special collaboration already exists with the University of Nottingham under UK-India Education and Research Initiative. One more such collaboration that the University (The Dept of Energy) has been involved with is the Multinational Collaboration Project among the Indo-European Union and Universities (funded by the European Commission and Govt of India).

The INTELLECTUAL PROPERTY RIGHTS CELL of the University organized six workshops, including outreach programmes in the nearby States during 2012-13 in order to create an IP conscious society within and outside the University arena. Among these were a special training programme for the Police and Judicial officers of the North Eastern Region and a workshop for Grassroot Women Innovators.

During 2012-2013 the Equal Opportunity Cell (EOC) of the University conducted CSIR/UGC NET coaching for students on various programmes; a 4-month Certificate Programme on Communicative English for Army Wives; several workshops on Research Methodology in Social Sciences for college teachers in collaboration with OKDISCD, Guwahati; a Capacity Building Programme for the Faculty and Research Scholars of the University; a One-day Basic Training Programme on Human Rights for NSS Students of the University; and a Video Conferencing with the American Centre in Kolkata for the Research Scholars under the School of Humanities and Social Sciences. The Cell partially generated funds from sponsors like ICSSR, Human Rights Commission, and the like.

The following new programmes were introduced during 2012-2013:

PG Diploma Hindi-English Translation (Centre for Open and Distance Learning)

MA in Linguistics and Language Technology (Dept of English and Foreign Languages)

Further Highlights of the Year

During the year the University also took several initiatives to promote, preserve and strengthen the varied cultural heritage of Assam and North-east India. Some of the noteworthy steps include the following:

- To honour Sri Sri Srimanta Sankardeva, the greatest religious leader, cultural luminary and social thinker of Assam, a Chair was instituted at the University with the name of *SRIMANTA SANKARDEVA CHAIR PROFESSOR*.
- To honour the memory of Dr Bhupen Hazarika, the doyen of Assamese music and culture, a Fellowship was instituted for both Doctoral and Post Doctoral research (position one each). *DR BHUPEN HAZARIKA FELLOWSHIP* will be for research on (1) Language, Literature, Culture, Religion of Assam and Northeast India, (2) Music and other traditions of Visual and Performing Arts of the region, and (3) Issues related to Ethnic and Social Harmony of Northeast India.
- To help spread the literary and social ideals of the revolutionary icon of Assam, Kalaguru Bishnu Prasad Rabha, an initiative was taken to translate his complete works into English. The translation reached its final stage last year.
- To commemorate the 150th Birth Anniversary of Sahityarathi Lakshminath Bezbaroa, a multi-faceted pioneer of Assamese literature, an *ANTHOLOGY OF SCHOLARLY ESSAYS* on his life and works was initiated last year.
- The *CHANDRAPRABHA SAIKIANI CENTRE FOR WOMEN'S STUDIES* of the University organized a number of programmes last year in order to coordinate and promote studies on women belonging to the multicultural North East India and also to train manpower to conduct research in women studies.
- In response to University Grants Commission's expressed interest and guidelines, a proposal was made to set up a *CENTRE FOR PRESERVATION OF ENDANGERED LANGUAGES OF NORTH-EAST INDIA*.

ACADEMIC DEPARTMENTS
AND
CENTRES

SCHOOL OF ENGINEERING
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF MANAGEMENT SCIENCES
SCHOOL OF SCIENCES





SCHOOL OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
DEPT OF ELECTRONICS AND CIVIL ENGINEERING
DEPT OF ENERGY
DEPT OF FOOD ENGINEERING AND TECHNOLOGY
DEPT OF MECHANICAL ENGINEERING



*School of Engineering***DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING****THE DEPARTMENT**

The prime objective of the Department has been to promote specialized knowledge and to carry out research in the frontier areas of Computer Science and Information Technology. The Department strives to channel the talented youth of the region to this challenging and knowledge-intensive field by imparting quality technical knowledge and skills. The thrust areas of research for the Department have been the following:

- Data Mining
- Bioinformatics
- Biomimetic and Cognitive Robotics
- Computer and Network Security
- Image Processing and Pattern Recognition
- Knowledge Representation and Reasoning
- Natural Language Processing
- Networks
- Optimization Techniques
- Workflow Analysis

ACADEMIC PROGRAMMES

- B Tech in Computer Science & Engineering
- Master in Computer Application
- M Tech in Information Technology
- PhD in Computer Science & Engineering

STUDENT INTAKE

Programme	Student Intake
B Tech (CSE)	52
MCA	60
MTech (IT)	30
PhD	Intake variable

[In addition to the above, a few students registered under the Special Support Scheme; yet another few registered under employee quota on supernumerary basis as per University policy]

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- Embedded System Trainer Lab (8085 & Arm) Processor Based (2 nos)
- Logic Analyzer
- Mixed Mode Oscilloscope

- Bench Mark LAN Trainer/i-securit
- Matrox Image System
- IBM X3550 M3 Server
- HP Elite 8300MT (i5) PCs
- HP Workstation 8600/6600
- Cisco 2821 Router
- Cisco 4948 L3 Switch
- Cisco 3560 L3 Switch
- Sun Ultra 27 Ws
- HP DL 380 Server

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

Principal Investigator	Description of the Project
D K Bhattacharyya	Developed an effective tool to launch instant DDoS attack using thousands of threads. The tool overcomes the limitations of wire shirk, a well known traffic monitoring tool.
N Saharia and U Sharma	Developed an IPA transcription tool. This tool has been used for IPA transcription of speech data of several Indian languages in a DeitY sponsored consortium project.
S M Hazarika and N M Kakoti	Developed an Electromyographic (EMG) controlled prosthetic hand emulating grasp type used during 70% of daily living activity. Achieved 97% recognition based on EMG.

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
Design and Development of a Dynamic Firewall Solution	DIT	225.58 lakhs	2 years	S M Hazarika
Network Intrusion Detection Based on Offline and Online Data Mining Techniques	DIT	47 lakhs	2 years	D K Bhattacharyya
Design and Development of Cost-Effective Bio-Signals Based Prosthetic Hand	DIT	27.36 lakhs	3 years	S M Hazarika
Machine Intelligence and Natural Language Processing	UGC	71 lakhs	5 years	D K Bhattacharyya U Sharma (Co-PI)
DDoS Attack Detection using Ensemble Approach	DIT	56 lakhs	3 years	D K Bhattacharyya N Sarma (Co-PI)
Development of Prosodically Guided Phonetic Engine for Searching Speech Databases in Indian Languages	DIT	30.015 lakhs	2 years	U Sharma S K Sinha (Co-PI)
Beyond Clustering Gene Expression Data	DST	9.88 lakhs	2 years	D K Bhattacharyya
Indian Languages Corpora Initiative (Phase 2)	DeitY	39.14 lakhs	1 year	U Sharma (Co-PI)
Protocols Design for Cognitive Radio Networks	DeitY	72.84 lakhs	2 years	N Sarma S Deka (Co-PI)
Understanding Causes of Codon Usage Bias in Organisms	DBT	26.36 lakhs	2 years	S S Satapathy (Co-PI)

PUBLICATIONS

In International and National Journals

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- Ahmed, H A., P Mahanta, D K Bhattacharyya and J K Kalita. 2012. Module extraction from subspace co-expression network. *Int. Journal of Network Modeling Analysis in Health Informatics and Bioinformatics*, (accepted).
- Ahmed, H A., P Mahanta, D K Bhattacharyya and J K Kalita. 2012. Module extraction from subspace co-expression network. *Int'l Journal of Network Modeling Analysis in Health Informatics and Bioinformatics (NetMAHIB)*, Springer, (DOI 10.1007/s13721-012-0018-2).
- Ahmed, H A., P Mahanta, D K Bhattacharyya, J K Kalita and A Ghosh. 2012. Intersected coexpressed subcube miner: an effective triclustering algorithm. *Int. Journal of Computer Information Systems and Industrial Management*, (accepted).
- Ahmed, H A., P Mahanta, D K Bhattacharyya and J K Kalita. 2012. Autotuned multilevel clustering of gene expression data. *American Journal of Bioinformatics Research*, 2(5).
- Banerjee, S., Bhargab B Bhattacharya, Sandip Das, Arindam Karmakar, Anil Maheshwari, and Sasanka Roy. 2012. On the construction of a generalized voronoi inverse of a rectangular tessellation. *Transactions on Computational Sciences*, (accepted).
- Bhuyan, M H., D K Bhattacharyy and J K Kalita. 2012. AOCD: an adaptive outlier based coordinated scan detection approach. *Int. Journal of Network Security*, 14(6).
- Bhuyan, M H., D K Bhattacharyya and J K Kalita. 2012. Network anomaly detection: Methods, systems and tools. *IEEE Communications Surveys & Tutorials*, (accepted).
- Bhuyan, M H., D K Bhattacharyya and J K Kalita. 2013. CA-KEP: A s CA based 2 pParty key exchange protocol. *Journal of Information Assurance and Security*, 7.
- Bhuyan, M H., H J Kashyap, D K Bhattacharyya and J K Kalita. 2013. Distributed denial of service attack detection: methods, tools and future directions. *The Computer Journal*, OUP, (accepted).
- Bhuyan, M H., D K Bhattacharyya and J K Kalita. 2013. Towards an unsupervised method for network anomaly detection in large datasets. *Journal of Computing and Informatics*, (in press).
- Chatterjee, B C., N Sarma and P P Sahu 2013. Priority based dispersion-reduced wavelength assignment for optical Networks. *IEEE/OSA Journal of Light wave Technology*, 31(2).
- Chatterjee, B C., N Sarma and P P Sahu. 2012. A heuristic priority based wavelength assignment scheme for optical networks. *Optik - Int. J. Light Electron Opt*, 123(7).
- Chatterjee, B C., N Sarma and P P Sahu. 2012. Priority based routing and wavelength assignment with traffic grooming for optical networks. *Journal of Optical Communications and Networking*, 4(6).
- Chatterjee, B C., N Sarma and P P Sahu. 2013. A QoS-aware wavelength assignment scheme for optical networks, *Optik - Int. J. Light Electron Opt*, (accepted).
- Chatterjee, B C., N Sarma and P P Sahu. 2013. Review and performance analysis on routing and wavelength assignment approaches for optical networks. *IETE Technical Review*, 30(1).

- Chutia, D., D K Bhattacharyya and S Sudhakar. 2012. Effective feature extraction approach for fused images of cartosat-i and landsat etm+ satellite sensors. *Applied Geometrics*, Springer, (DOI: 10.1007/s12518-012-0088-y).
- Das, D., U Sharma and D K Bhattacharyya. 2012. Rule based detection of SQL injection attack. *International Journal of Computer Applications*, 43(19).
- Gogoi, P., B Borah and D K Bhattacharyya, 2013. Classification of network anomalies using clustering. *Informatica*, (accepted).
- Gogoi, P., B Borah and D K Bhattacharyya. 2012. Outlier identification in high dimensional data with application to anomaly detection. *Elsevier Procedia Technology*, 6.
- Gogoi, P., B Borah and D K Bhattacharyya. 2013. MLH-IDSd: multi-level hybrid intrusion detection method. *The Computer Journal*, (accepted).
- Gogoi, P., R Das, B Borah, and D K Bhattacharyya. 2012. Efficient rule set generation using rough set theory for classification of high dimensional data. *Int. J. of Smart Sensors and Ad Hoc Networks (IJSSAN)*, 1(2).
- Haque, N., B Nath and D K Bhattacharyya. 2012. A new approach on rare association rule mining. *Int. Journal of Computer Applications*, 53 (3), Foundation of Computer Science, New York, USA.
- Hazarika, S M. and A Bhowmick. 2012. Learning rules of a card game from video. *Artificial Intelligence Review*, 38(1), Springer.
- Jakhar, J., P Dey, M Dutta and D K Bhattacharyya. 2012. CellTCS: a secure threshold cryptography Scheme based on non-linear hybrid cellular automata. *Elsevier Procedia Technology*, 6.
- Karmakar, A., Sandip Das, Subhas C Nandy, Binay K Bhattacharyya. 2013. Some variations on constrained minimum enclosing circle problem. *J. Comb. Optim*, 25(2).
- Mahanta, Priyakshi, Hasin A Ahmed, and D K Bhattacharyya, J K Kalita. 2012. An effective method for network module extraction from microarray data. *BMC Bioinformatics*, 13:S4, (<http://www.biomedcentral.com/1471-2105/13/S13/S4>).
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- Mukherjee, J., Priya Ranjan Sinha Mahapatra, Arindam Karmakar, and Sandip Das. Minimum-width rectangular annulus. *Theoretical Computer Science*, (accepted).
- Nath, B., D K Bhattacharyya and A Ghosh. 2012. Incremental association rule mining: a survey. *Int. Journal of DMKD*, Wiley InterScience, (in press).
- Priyadarshini, G., R Das, D K Bhattacharyya and J K Kalita. 2012. An effective graph based clustering technique to identify coherent patterns from gene expression data. *Int. J. Bioinformatics Research and Applications*, Vol 8(1-2), (DOI: 10.1504/IJBRA.2012.045974).
- Roy, S. and D K Bhattacharyya. 2012. Mining strongly correlated item pairs in large transaction databases. *Int. J. of Data Mining, Modeling and Management (IJDMMM)*, 4(6), (in press).
- Roy, S., D. K. Bhattacharyya and J. K. Kalita. 2013. CoBi: Pattern based co-regulated biclustering of gene expression data. *Pattern Recognition Letters*, Elsevier, (accepted).
- Roy, S., D K Bhattacharyya and J K Kalita. 2012. Pattern based biclustering of co-regulated genes in gene expression data. *Frontiers in Artificial Intelligence and Applications (KES 2012)*, 243.

- Sarma, S. and D K Bhattacharyya. 2012. A grid density based technique for clustering satellite images, in the pattern recognition. *Pattern Recognition Letters* 33, (DOI: 10.1016/j.patrec.2011.11.021).
- Sarmah, Rosy. 2013. Gene expression data clustering using a fuzzy link based approach. *Int. Journal of Computer Information Systems and Industrial Management (IJCISIM)*, 5.
- Satapathy, S S., M Dutta, A K Buragohain and S K Ray. 2012. Transfer RNA gene numbers may not be completely responsible for the codon usage bias in asparagine, isoleucine, phenylalanine and tyrosine in the high expression genes in bacteria. *J. Mol. Evol.*, 75.
- Singh, N G., and L B Singh. 2012. Privacy preserving reputation system for virtual marketplaces. *European Journal of Applied Engineering & Scientific Research*, 1(2).

Conference proceedings

- Ahmed, H A., P Mahanta and D K Bhattacharyya. Finding gene coherent patterns using PATSUB+. In ACM Proceedings of ICACCI 2012, Chennai, India, (accepted).
- Bania, R. and B Borah. A new modified approach to rough set feature selection. In Proceedings of the 3rd International Conference on Computer Applications (ICCA 2012), Pondicherry, India.
- Bhuyan, M. H., D K Bhattacharyya and J K Kalita. An effective unsupervised network anomaly detection method. In ACM Proceedings of ICACCI 2012, Chennai, India, (selected for the Best Paper Award).
- Boro, D., B Nongpoh and D K Bhattacharyya. Anomaly based intrusion detection using meta ensemble classifier. In ACM Proceedings of SIN 2012, Jaipur, India.
- Boro, D., B. Nongpoh and D K Bhattacharyya. Anomaly based intrusion detection using meta ensemble classifier. In ACM Proceedings of SIN 2012, Jaipur, India.
- Chettri, S K. and B Borah. An efficient microaggregation method for protecting mixed data. In Proceedings of the 4th International Conference on Networks & Communications (NETCOM 2012), Chennai, India.
- Choudhary, S K., D Chakraborty, N Kakoty, S M Hazarika. Development of cost effective EMG controlled three fingered robotic hand. In Proceedings of IEEE 3rd International Conference on Computer and Communication Technology (ICCCT 2012), Chennai, India.
- Das, S K., and B Borah. A Density-based micro aggregation technique for privacy-preserving data mining. In Proceedings of the 1st National Conference on Research & Higher Education in Information Technology (RHEIT 2013), Silchar, Assam, India.
- Deka, S K., and N Sarma. Channel-usage model in underlay cognitive radio networks. In Proceedings of the 4th International Conference on Networks and Communications (NETCOM 2012), Chennai, India.
- Gogoi, P., M. H. Bhuyan, D K Bhattacharyya and J K Kalita. Packet and flow based network intrusion dataset. In LNCS Proceedings of IC3 (2012), Noida, India.
- Goswami, R., D K Bhattacharyya and M Dutta. Selection of views for materializing in data warehouse using MOSA and AMOSA. In LNICST Proceedings of ICCSEA 2012, New Delhi.
- Hazarika, S M., A Saikia, S Bordoloi, U Sharma, N Kotoky. Brain Computer Interface as Sensor for Ambient Intelligent Living: A Position Paper. In Proceedings of International Conference on Intelligent Infrastructure (the 47th Annual National Convention of CSI 2012), Kolkata.

- Hoque, N., B Nath and D K Bhattacharyya. An efficient approach on rare association rule mining. In Proceedings of the 7th International Conference on Bio-inspired Computing: Theories and Applications, 2013, Gwalior, India, Springer.
- Kashyap, H., and D K Bhattacharyya. A DDoS Attack Detection Mechanism Based on Protocol Specific Traffic Features. In ACM Proceedings of CCSEIT 2012, Coimbatore, India, (DOI>10.1145/2393216.2393249).
- Mahanta, P., H A Ahmed, D K Bhattacharyya and J K Kalita. Discretization in gene expression data analysis: a survey. In ACM Proceedings of CCSEIT 2012, Coimbatore, India, (DOI>10.1145/2393216.2393229).
- Medhi, N., and N Sarma. Mobility aided cooperative mimo transmission in wireless sensor networks. In the Proceedings of the 2nd International Conference on Communication, Computing & Security (ICCCS 2012), Rourkela, India.
- Medhi, N., N Sarma and A Mira. Cooperative MIMO in wireless sensor networks with mobile sensors for cooperativeness and data aggregation. In the Proceedings of IEEE INDICON 2012, Kochi, India.
- Rahman, T A., and D K Bhattacharyya. Network module extraction with positive and negative co-regulation number. In ACM Proceedings of CCSEIT 2012, Coimbatore, India. (DOI>10.1145/2393216.2393231).
- Rahman, T A., and D K Bhattacharyya. SGCOD: simultaneous gene clustering and outlier detector. In LNICST Proceedings of SocPros 2012, Jaipur, India.

Roy, A., and N Sarma. Performance evaluation of synchronous energy efficient mac protocols for wireless sensor networks. In the Proceedings of the 2nd International Conference on Communication, Computing & Security (ICCCS 2012), Rourkela, India.

Saharia, N., U Sharma, J C Kalita. Analysis and evaluation of stemming algorithms: a case study with Assamese. In the Proceedings of the International Conference on Advances in Computing, Communications and Informatics (ICACCI 12), Chennai, India.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- A Sarma, S M Hazarika, and S K Sinha presented a paper, Composing and maintaining a pattern-based workflow as a constraint graph, at the International Symposium for Cloud and IT Services, (ISCOS 2012), Mangalore, India, 17-18 December 2012.
- H Sarma, N Saharia, U Sharma, S K Sinha, and M M Jyoti presented a paper, Development and transcription of Assamese speech corpus, at the National Seminar on Recent Trends & Techniques in Computer Sciences, Kokrajhar, 14-15 March 2013.
- R Baruah and S M Hazarika presented a paper, Qualitative directions in egocentric spatial reference frame, at the 12th International Conference on Intelligent Systems Design and Applications (ISDA 2012), Kochi, India, 27-29 November 2012.
- S Bordoloi, U Sharma, and S M Hazarika presented a paper, Motor imagery based bci for a maze game, at the 4th International Conference on Intelligent Human Computer Interaction (IHCI 2012), Kharagpur, India, 27-29 December 2012.
- S Bordoloi, U Sharma, S M Hazarika presented a paper, Classification of motor imagery based on hybrid features of bispectrum of EEG, at the International Conference on Communications, Devices and Intelligent Systems (CODIS 2012), Kolkata, 28-29 December 2012.

S K Deka and N Sarma presented a paper, A review on security vulnerabilities in cognitive radio networks, at the national workshop on Network Security (NWNS 2013), Tezpur University, 15-16 March 2013.

S S Satapathy, B R Powdel, M Dutta, A K Buragohain and S K Ray presented a paper, Constraint on genome signature by coding sequences in bacterial genomes, at the International Conference on Biomolecular Forms and Functions, Bangalore 8-13 January 2013.

T Kalita, N M Kakoty, S Kaushik, and S M Hazarika presented a paper, End-effector error analysis of a six dof robotic manipulator: initial results, at the National Conference on Advances in Electronics and Communication Engineering, Pune, India, 21-22 December 2012.

TALKS BY THE FACULTY ABROAD AND IN INDIA

D K Bhattacharyya visited the University of Colorado at Colorado Springs, USA for a period of 1 month (July 2012) in the interest of research collaboration with the Faculty of the Dept of CSE, Tezpur University.

N Sarma delivered a talk at the TEQIP sponsored Faculty Development Programme on Research Issues and Prospects in Computer Science and Information Technology, organized by North Eastern Regional Institute of Science & Technology (NERIST), Nirjuli, Arunachal Pradesh, 1-5 May, 2012.

N Sarma delivered a talk at the Workshop on Building Digital Library, organized by Central Library, Tezpur University in collaboration with National Library, Kolkata, 8-11 October, 2012.

N Sarma delivered a talk at the National Workshop on High Level Programming Languages with Image Processing and Pattern Recognition, Organized by Hojai College, Nagaon, Assam, in collaboration with ISI Kolkata, 25-31 March 2012.

N Sarma delivered a talk at the Training Programme on Information and Communication Technology organized by NERIWALM, Tezpur, 13 September, 2012.

S M Hazarika delivered a talk at the TEQIP sponsored Faculty Development Programme on Research Issues and Prospects in Computer Science and Information Technology, Organized by North Eastern Regional Institute of Science & Technology, (NERIST), Nirjuli, Arunachal Pradesh, 1-5 May, 2012.

U Sharma delivered a talk at the TEQIP sponsored Faculty Development Programme on Research Issues and Prospects in Computer Science and Information Technology, Organized by North Eastern Regional Institute of Science & Technology, (NERIST), Nirjuli, Arunachal Pradesh, 1-5 May, 2012.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Workshop on Introduction to Computational Phonetics, Phonology and Prosody, 23-29 December 2012.
- National Workshop on Network Security (sponsored by DeitY and UGC under SAP, Govt. of India), 15-16 March 2013.
- Workshop on Decision Making, Quantum Probability and Modeling in Cognitive Science (organized in collaboration with ISI, India), 21- 22 March 2013.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof Bhabani P Sinha, ISI Kolkata

Prof Deep Medhi, University of Missouri-Kansas City, USA

Prof Jugal Kalita, University of Colorado at Colorado Springs, USA

Prof Peri Bhaskararao, IIIT Hyderabad

Prof S R Mahadeva Prasanna, IIT Guwahati

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- NET: 7
- GATE: 20

THE FACULTY OF THE DEPARTMENT**Professors**

D K Saikia, PhD (IIT, Kharagpur)
(On lien as Director, NIT, Meghalaya)
Specialization/Areas of interest: Mobile Computing, Computer Networks
E-mail: dks@tezu.ernet.in

M Dutta, PhD (IIT, Kanpur)
Specialization/Areas of interest: Data mining, Optimization
E-mail: malay@tezu.ernet.in

D K Bhattacharyya, PhD (Tezpur)
Specialization/Areas of interest: Cryptography, Data Mining, Networks security and Bio-informatics
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S K Sinha, PhD (Tezpur)
Specialization/Areas of interest: Workflow Automation, Semi-structured Databases, Web Technology
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S M Hazarika, PhD (Leeds, England)
Specialization/Areas of interest: Qualitative Spatial Reasoning, Cognitive robotics, Intelligent Assistive Systems
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Head of the Department
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N Sarma, PhD (IIT, Guwahati)
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Associate Professors

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E-mail: sarat@tezu.ernet.in

B Nath, PhD (Tezpur)
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A K Karmakar, PhD (ISI, Kolkata)
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*School of Engineering***DEPARTMENT OF CIVIL ENGINEERING****THE DEPARTMENT**

The Department of Civil Engineering was established in 2009 under the School of Engineering with an aim to provide quality engineering education to students, carry out excellent research and consultancy, and to produce top-quality civil engineers. Currently the Department offers BTech and PhD programmes. It has plans to introduce an MTech programme in the next plan.

ACADEMIC PROGRAMMES

- BTech in Civil Engineering
- PhD in Civil Engineering

STUDENT INTAKE

Programme	Student Intake
BTech	60 (AICTE approved)
PhD	Intake variable

MAJOR FACILITIES & EQUIPMENT AVAILABLE

Geotechnical Engineering Laboratory, Hydraulics Laboratory, Surveying Laboratory, Environmental Engineering Laboratory, Material Laboratory, Transportation Laboratory

Major Equipment: Digital Triaxial Testing Equipment, Direct Shear Apparatus, Unconfined compression test apparatus, Permeability Apparatus, Orifice and Mouth Piece, Reynold's Apparatus, Cavitation Apparatus, Laminar flow Table Apparatus and Darcy's Law Apparatus, Auto level, Standard Vernier Theodolite, Electronic Theodolite, Total Station (Electronic), Digital Planimeter, Compression Testing Machine, Abrasion Testing Machine, Impact Value Testing Machine, California Bearing Ratio Apparatus, COD Reactor, Flame Photometer, Spectro Photometer, BOD Reactor.

Softwares available in the Department: Plaxis 2D, Civil FEM for ANSYS version 12.1, Matlab and Simulink R2011b.

PUBLICATIONS**In International and National Journals**

Ahamad, K U. and M Jawed. 2013. Breakthrough studies with mono-, binary- and ternary- metal ion systems comprising of Fe(II), F⁻ and As(III) using river sand packed columns for groundwater treatment. *Journal of Water and Health*, 11(2).

Sil, B S., A Kumar, P Saikia, P J Bui, and P Banerjee. 2013. Computation of least cost pipe network – an alternate method. *International Journal of Computational Engineering Research*, 3(2).

Sil, B S., A Kumar, P Saikia, P J Bui, and P Banerjee. 2013. Use of excel-solver as an optimization tool in design of pipe network *International Journal of Hydraulic Engineering*, 2(4).

Ahamad, K U. and M Jawed. 2012. Breakthrough studies with mono- and binary-metal ion systems comprising of Fe(II) and As(III) using community prepared wooden charcoal packed columns. *Desalination*, 285.

Ahamad, K U. and M Jawed. 2012. Potential of community prepared wooden charcoal of Assam (India) for As(III) removal through batch and continuous column studies. *Journal of Water, Sanitation and Hygiene for Development*, 2(2).

Conference proceedings

Das, U K. and B D Saikia. Suction profile of unsaturated residual soil hill slopes of Guwahati. In Proceedings of the Indian Geotechnical Conference (IGC-2012), 13-15 December 2012, New Delhi.

Saikia, A. An Empirical design chart to estimate consolidation settlement of NC clays. In Proceedings of the Indian Geotechnical Conference (IGC-2012), 13-15 December 2012, New Delhi.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof Anajan Dutta, IIT Guwahati

Prof A Sridharan, Retd Professor, IISc, Bangalore and Fellow of Indian National Science Academy (INSA)

Prof M L Kansal, Professor, IIT Roorkee, Roorkee

Prof Tarun Kant, Institute Chair Professor, Dept of Civil Engineering, IIT Bombay

Prof Sudip Talukdar, IIT Guwahati

NUMBER OF STUDENTS WHO PASSED NET/JRF/GATE

- 6 out of the total of 12 first batch students on the BTech Programme qualified for GATE.

THE FACULTY OF THE DEPARTMENT

Associate Professor

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Head of the Department

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Assistant Professors

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Specialization/Areas of interest: Environmental Engineering

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Briti Sundar Sil, MTech (NIT-Silchar), PhD (NIT-Silchar)

Specialization/Areas of interest: Water Resource Engineering

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Debaraj Bailung Sonowal, MTech (IIT-Roorkee)
Specialization/Areas of interest: Structural Engineering
E-mail: bailung@tezu.ernet.in

Shailen Deka, ME (Gauhati), PhD (IIT-Guwahati)
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E-mail: deka.s@tezu.ernet.in

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Nirmalendu Debnath, MTech (IIT-Guwahati)
Specialization/Areas of interest: Structural Engineering
E-mail: nirmal@tezu.ernet.in

School of Engineering

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

THE DEPARTMENT

The Department was opened in 1997 with an MTech programme in Electronics Design & Technology. In August 2004 the Department also introduced an MTech in Bioelectronics as approved by the UGC under its scheme called Teaching and Research in Interdisciplinary and Emerging Areas. The course aims at producing professionals in the fields of medical, food safety, agriculture, defence, biotech and biosensor industries. Both courses have been recognized by AICTE. The Department has also introduced a BTech programme in Electronics and Communication Engineering in August 2006. It has also introduced a career oriented programme, Advanced Diploma in Healthcare Informatics and Management (supported by UGC). The Department has been a UGC-SAP and DST-FIST supported Department.

The thrust areas of research for the Department have been: Bioelectronics, Biosensors, Microwave Engineering, Communication Engineering, Microelectronics, and Signal and Image Processing.

ACADEMIC PROGRAMMES

- BTech in Electronics & Communication Engineering
- MTech in Electronics Design & Technology
- MTech in Bioelectronics
- Advanced Diploma in Healthcare Informatics & Management (Part-time)
- PhD (Electronics & Communication and Bioelectronics)

STUDENT INTAKE

Programme	Student Intake
MTech in Electronics Design & Technology	28
MTech in Bioelectronics	15
BTech in Electronics & Communication Engineering	52
Advanced Diploma in Healthcare Informatics & Management (Part-time)	30
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

Bioelectronics Laboratory (UGC sponsored Innovative Programme Scheme) Matlab - Software E-nose setup Image processing setup Robotic setup Neuroengineering setup Biomedical setup	Micro fabrication Laboratory (DST-FIST Sponsored) Suss Photolithography set up Thin film and E-gun deposition set up Spin coating instrument Oxidation furnace etc.
Digital Laboratory Microprocessors Microcontrollers Function generators Logic analyzers Digital trainers Digital ICs Pulse generator Data acquisition cards Stepper motor controller cards Relay & opto-coupler interfacing cards	Software Laboratory Server with computer Lab view Xilinx CPLD-FPGA Electronic Design Automation (EDA) software Microsim Matlab GENIE Orcad Oracle
Instrumentation Laboratory CRO Optical Transducers Temperature measurement tutor Load cell 100kg Load cell 10kg Pressure cell RPM measurement tutor Microprocessor based data acquisition Multi-channel temperature indicator with thermocouple Humidity probe with indicator PC based stepper motor Servo motor driver etc	Mechanical workshop Lathe machine Vertical milling machine Notching machine Drilling machine Welding machine Bench grinder-cum-polisher Flexible shaft grinder Pipe bending Z Section cutters Hand shears Wood working lathe Wood working surface-cum-thickness planner Sheet folding machine Portable gun type welding machine Heavy duty drill machine High frequency PVC welding machine Automatic coil winding machine
Communication Engineering Laboratory Amplitude modulation / demodulation Frequency modulation/ demodulation, Transmitter/receiver, Data formatting, PSK, FSK, ASK, DSSS set up, Fiber Optic Kit	PCB Laboratory PCB art work table PCB magnifier Photo resist UV exposure Photo resist coating whirler Drying oven Guillotine shearing machine High speed drilling machine

Microwave Laboratory Microwave bench, Microwave sources High frequency spectrum analyzer etc Hardware Laboratory Soldering/Desoldering station. Testing equipments Oscilloscopes Hand tools Components DSP Laboratory MATLAB DSP kits Modelling and Simulation Laboratory PCs attached to a LAN server consisting of about 35 terminals all connected to Internal Server FPGA boards (Spartan 3E family) Different circuit simulators BTech Summer Training Laboratory (for outside institutes) E-nose sensors Data acquisition cards Microcontroller/Microprocessors Measuring & testing equipment	Basic Electrical Engineering Laboratory D C machines with power supply Voltmeter Ammeter Wattmeter Q meter Network theorem kits A/C, D/C bridges Power supplies Oscilloscope Transistor characteristics kit Variac Digital IC trainer OPamp voltage comparator/multiplier Analog digital trainer BJT amplifier trainer kits Digital trainer (GATE) Analog circuit maker Digital logic trainer Function generator P C based logic analyzer Diode characteristic kits Clipping clamping trainer kits FET trainer Single phase transformer DC generator DC motor
ICT Laboratory Newly developed	Image Processing Laboratory Newly developed

RESEARCH PROJECTS: ONGOING AND NEW

Titles of the Projects	Investigators	Amount in INR	Duration	Principal Investigator
Design And Development of Compressed Sensing Based Image Reconstruction Prototype Hardware Architecture for Medical Imaging Applications	DST	28 lakh	3 years	BhabeshDeka
Development of Compressed Sensing Based Image Reconstruction Techniques for Medical Imaging Applications.	UGC	18 lakhs	3 years	BhabeshDeka
DST-FIST for Setting Up of Micro Fabrication Facilities	DST	137 lakhs	5 years	Departmental Project
Hardware Based Field-Type E-Nose For Flavor Detection of Tea Using Metal Oxide Semiconductor (MOS) Sensors	DST	33.53 lakhs	3 years	M Bhuyan
SAP	UGC	69 lakhs	5 years	Departmental Project
Setting Up of Facilities For Fabrication of MEMS Devices	DIT	326.43 lakhs	5 years	P P Sahu

PUBLICATIONS**In International and National Journals**

- Bonjyotsna, A. and M Bhuyan. 2013. Recent trends in signal processing for singing voice identification: A review. *International Journal Of Imaging and Robotics*, (accepted).
- Chatterjee, Bijoy Chand, Nityananda Sarma, and Partha Pratim Sahu. 2012. Priority based routing and wavelength assignment with traffic grooming for optical networks. *IEEE/OSA Journal of Optical Communication and Networking*, 4(6).
- Chatterjee, Bijoy Chand, Nityananda Sarma, and Partha Pratim Sahu. 2013. Priority based dispersion-reduced wavelength assignment for optical networks. *IEEE/OSA Journal of Lightwave Technology*, 31(2).
- Chatterjee, Bijoy Chand, Nityananda Sarma, and Partha Pratim Sahu. 2013. Review and performance analysis on routing and wavelength assignment approaches for optical networks. *IETE Technical Review*, 30(1).
- Chatterjee, Bijoy Chand, Nityananda Sarma, and Partha Pratim Sahu. 2012. A heuristic priority based wavelength assignment scheme for optical networks. *Optik-International Journal for Light and Electron Optics*, 123(17).
- Deka, B. and Dipranjan Baishanb. 2012. A noncausal linear prediction based switching median filter for the removal of salt and pepper noise. *International Journal in Image and Signal Processing (IUSP)*, 3(1).
- Deka, B. and P K Bora. 2012. Wavelet based despeckling of medical ultrasound images. *IETE Journal of Research*, (in press).
- Deka, B. and P K Bora. 2013. Removal of correlated speckle noise using sparse and overcomplete representations. *Biomedical Signal Processing and Control*, (accepted).
- Deka, B. and Sangita Choudhury. 2013. A multiscale detection based adaptive median filter for the removal of salt and pepper noise from highly corrupted images. *International Journal of Signal Processing, Image Processing and Pattern Recognition*, (accepted).
- Deka, B. and M K Rai Baruah. 2013. Single-image superresolution using compressive sensing. *International Journal of Image Processing and Visual Communication*, 7.
- Dutta, N. and M Bhuyan. 2012. Classification enhancement of MOS based sensors by optimal temperature modulation using system identification. *Journal of Advancement of Modeling and Simulation Techniques*, 1.
- Dutta, N. and M Bhuyan. 2012. Optimal temperature modulation of MOS gas sensors by system identification. *International Journal of Signal Processing, Image Processing and Pattern Recognition*, 5(2).
- Kakoty, N M. and S M Hazarika. 2013. Towards electromyogram based grasps classification. *International Journal of Biomechatronics and Biomedical Robotics*, 1.
- Kakoty, Nayan, M., and Shyamanta M. Hazarika. 2013. A two layered control architecture for prosthetic grasping, paladyn. *Journal of Behavioral Robotics*. 4(1).
- Kakoty, N M., Mantoo Kaiborta, and S M Hazarika. 2013. Electromyographic grasp recognition for a five fingered robotic hand. *IAES- International Journal of Robotics and Automation*, 2(1).
- Kakoty, Nayan M., Aditya Saikia, and S M Hazarika. 2013. Exploring a family of wavelet transforms for E MG based grasp recognition. *Journal of Signal Image and Video Processing*, 7.

- Kumar, C., D S Yadav, Jitendra Singh, Parashuram, and Ghanendra Kumar. 2012. Optoelectronic properties of zinc blende and wurtzite structured binary solids. *Journal of Engineering and Computer Innovations*, 3(2).
- Kumar, C., Girish Narah, and Aroop Sharma. 2013. Analytical analysis of ray characteristics inside the optical fiber. *The Journal of Telecommunications*, 18(1).
- Nath, V K, and D Hazarika. 2012. Statistical distributions of discrete walsh hadamard transform coefficients of natural images. *International Journal of Signal and Image Processing*, 3(1).
- Nath, V. K., and D Hazarika. Image deblocking in wavelet domain based on local laplace prior. *International Journal of Multimedia and Its Applications*, 4(1).
- Pachauri, A. and M Bhuyan. 2012. Wavelet transform based arterial blood pressure waveform delineator. *International Journal of Biology and Biomedical Engineering*, 6(1).
- Purohit, H., Chakresh Kumar, Neelam Dhankar, and Ghanendra Kumar. 2012. Efficient active noise cancellation using pruning technique of ANN. *Journal of Telecommunications*, 14(1).
- Rai Baruah, M K., and Bhabesh Deka. 2013. Image denoising using sparse and overcomplete representations - A study. *International Journal on Current Science and Technology*, 1(1).
- Roy, S., M Boro, J C Dutta, and R H Vanlalchaka. 2013. Acetylcholine gated spiking neuron model. *Int. Jr. on Current Sc. & Tech.*, 1.
- Roy, S. and R H Vanlalchaka. 2013. Power efficient adiabatic gray to binary & binary to gray code converter circuits. *Int. Jr. on Current Sc. & Tech.*, 1.
- Sahu, P P. 2012. All optical switch using optically controlled two mode interference coupler. *Applied Optics*, 51(14).
- Sharma, M. and J C Dutta. 2013. Enzyme-modified field effect transistors (enfets) as biosensors : A research review. *Int. Jr. on Current Sc. & Tech.*, 1.
- Sinha, Shivaji, and Chakresh Kumar. 2013. Wavelet and fast fourier transform based ber analysis for multi carrier communication. *Journal of Telecommunications*, 18(2).
- Sonowal, Durlav, Santanu Sarma, and Riku Chutia. 2013. Scaling theory for conical surrounding-gate MOSFET. *International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering*, 2(2).

Conference proceedings

- Baruah, A K R., and B Mondal. Thermally actuated MEMS based silicon micropump. In Proceedings of Communication Devices and Intelligent Systems (CODIS 2012), Kolkata.
- Baruah, A K R., G Talukdar, and B Mondal. Design of MEMS based diaphragm for micro pump in drug delivery and biomedical application. In Proceedings of 2nd International Conference on Biomedical Engg. and Assistive technologies (BEATS-2012), Jalandhar.
- Bonjyotsna, A., S Roy. Review of drowsiness detection technique from ECG. In Proceedings of Frontiers in Science & Technology 2013 (Assam Science Society), Guwahati.

- Choudhary, S K., D Chakraborty, N M Kakoty, and S M Hazarika. Development of cost effective EMG controlled three fingered robotic hand. In Proceedings of the 3rd International Conference on Computer and Communication Technology (ICCCT 2012), Allahabad.
- Deka, B., and D Baishnab. Removal of random-valued impulse noise using overcomplete DCT dictionary. In Proceedings of 2012 International Information Technology Conference and Exhibition, Pune.
- Kakoty, Nayan M., and S M Hazarika. A biomimetic similarity index for prosthetic hands. In Proceedings of Computational Intelligence in Rehabilitation and Assistive Technologies 2013, Singapore.
- Kalita, T., N M Kakoty, S Kaushik, and S M Hazarika. End-effector error analysis of a six dof robotic manipulator: initial results. In Proceedings of Advances in Electronics and Communication Engineering (ACE 2012), Pune.
- Kaushik, S., and N M Kakoty. Mouse cursor control system based on facial electromyogram and mechanomyogram. In Proceedings of the 3rd International Conference on Computer and Communication Technology (ICCCT), Allahabad.
- Nath, V. K., and D Hazarika. Blocking artifacts suppression in wavelet transform domain using local wiener filtering. In Proceedings of Emerging Trends And applications in Computer Science (NCETACS-2012), Shillong.
- Nath, V. K., and D Hazarika. Comparison of generalized gaussian and cauchy distributions in modeling of dyadic rearranged 2D DCT coefficients. In Proceedings of Emerging Trends And applications in Computer Science (NCETACS-2012), Shillong.
- Sarma, A., and R K Baruah. A high slew rate moderate speed CMOS Opamp using 0.18 um technology. In Proceedings of Advances in Electronics, Electrical and Computer Science Engineering (EEC 2012), Dehradun.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- P Kakoty participated in the workshop, One week Coordinators Workshop on Analog Electronics, organized by IIT Kharagpur, Kharagpur, SGI, Maharastra, 4-14 June 2013.
- A Bonjyotsna participated in the international conference, International IEEE Conference on Image Processing, Signal Processing and Pattern Recognition (ICSIPR 2013), organized by Karunya University, Coimbatore, 7-8 February, 2013.
- A Bonjyotsna participated in the workshop, INUP Familiarization Workshop Especially for the North East, organized by IIT-Guwahati, Guwahati, 28-29 September, 2012.
- R Baruah participated in the workshop, INUP Hands-On Training Workshop on Nano-Fabrication Technology, organized by IIT Bombay, Mumbai, 18-22 March, 2013.
- C Kumar participated in the workshop, INUP Familiarization Workshop Especially for the North East, organized by IIT-Guwahati, Guwahati, 28-29 September, 2012.
- B Deka participated and presented a paper in the international conference, IEEE International Conference on Signal Processing and Communications (SPCOM 2012), organized by Indian Institute of Science, Bangalore, Bangalore, 22-25 July, 2012.

B Deka attended the one-week training programme, FPGA Design on Altium Tools, organized by Entuple Technologies Pvt. Ltd., Bangalore, Tezpur, 21-25 August 2012.

B Deka attended the five-day workshop, Advances in Document Analysis and Retrieval, jointly organized by Computer Vision and Pattern Recognition Unit (CVPRU), ISI, Kolkata and Dept of ECE, Gauhati University, Guwahati, Guwahati, 7-11 March, 2013.

S Roy participated in the workshop, Understanding Embedded Systems, organized by Tripura Institute of Technology, Tripura, Tripura, 4-15 June, 2012.

N Kakoty participated in the 3rd International Conference on Computer and Communication Technology, organized by MANIT, Allahabad, Allahabad, 23-25 November, 2012.

B Mondal participated in the 7th INUP Familiarization Workshop on Nano Fabrication Technologies, organized by IIT, Bombay, Mumbai, 4-8 June, 2012.

B Mondal participated in the 9th International Workshop on Nanomechanical Sensing-2012, organized by IIT, Bombay, Mumbai, 6-8 June, 2012.

SEMINARS/WORKSHOPS/SYMPOSIA/EXTENSION PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Advances in Photonic, Electronic & Communication Systems (APECS-12), conducted by UGC-Networking Resource Center for Physical Sciences (NRCPS) and Institute of Radio Physics & Electronics, University of Calcutta, 23-27 January, 2012.
- Online Workshop, Introduction to Research Methodologies, conducted by IIT, Bombay, under NME-ICT, 4-11 June, 2012.
- Online Workshop, Aakash for Education, conducted by IIT, under NME-ICT Bombay 10-11 November, 2012.
- Online Workshop, Aakash Android Programming Workshop for Students, conducted by IIT, under NME-ICT Bombay, 23-24 February, 2013 and 2-3 March, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

B Deka delivered a talk, Overview of Digital Image Processing, at the TEQIP sponsored FDP, Emerging Research Areas in Electronics and Communication Engineering, organized by NERIST, Nirjuli, Nirjuli, 15-19 May 2012.

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- GATE: 25
- NET: 3

THE FACULTY OF THE DEPARTMENT**Professors**

M Bhuyan, MTech (IIT Kharagpur), PhD (Gauhati)

Specialization/Areas of interest: Instrumentation and Sensor Design, Signal Processing

Email: manab@tezu.ernet.in

P P Sahu, MTech (IIT Kharagpur), PhD (Jadavpur)

Head of the Department

Specialization/Areas of interest: Optical Network & Wireless Communication

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J Ch Dutta, ME (Jadavpur), PhD (Jadavpur)

Specialization/Areas of interest: Biosensors and Bioelectronics, Neurobio-engineering

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Specialization/Areas of interest: Microwave Antennas

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Associate Professors

S Sharma, MTech (Tezpur), PhD (Tezpur)

Specialization/Areas of interest: MOSFET, Bioelectronic Device-ISFET

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Specialization/Areas of interest: Image processing, Computer vision

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Assistant Professors

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Specialization/Areas of interest: Instrumentation, Embedded System, ANN, Signal Processing

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Specialization/Areas of interest: VLSI Design, Nano Scale Device Modeling and Simulation

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Specialization/Areas of interest: Microelectronics, MEMS based Sensors and Sensing Materials

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Specialization/Areas of interest: Microprocessor Based/Embedded System Design, Instrumentation Sensors

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C Kumar, MTech (ISM, Dhanbad)

Specialization/Areas of interest: Optical Fiber Communication

Email: chakresh@tezu.ernet.in

Ms A Bonjyotsna, MTech (Tezpur)

Specialization/Areas of interest: Biomedical signal processing

Email: ananyab@tezu.ernet.in

P Kakoty, MTech (Tezpur)

Specialization/Areas of Interest: Design and Fabrication of Gas Sensor

Email: priyankak@tezu.ernet.in

*School of Engineering***DEPARTMENT OF ENERGY****THE DEPARTMENT**

The Department of Energy was established in 1996 with an aim to produce manpower pools in the field of Energy; develop new and efficient energy technologies; and to carry out research and extension activities in diverse areas of Energy. The thrust areas of teaching, research and extension activities for the Department have been new and renewable energy technologies and systems, relevant to regional/national needs and current international trends. Energy planning, management and conservation including the climate change issues have been the special thrust areas for the Department.

ACADEMIC PROGRAMMES

- MTech in Energy Technology
- PhD

STUDENT INTAKE

Programme	Student Intake
MTech in Energy Technology	35
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- PG Stat Auto Lab, Model: 302N
- Gas Chromatograph, Model: HP 4890
- Fibretech System, Make: FOSS TECATOR
- Portable Digital Power Meter, Make: Yokogawa
- Biomass Gasifier with Wood Cutter, Make: Ankur Scientific
- TOC Analyzer, Make/Model: LiquiTOCII, Elementar
- UV-VIS Spectrophotometer, Make: Shimadzu, Model: 1700
- Research Radiometer, Make: International Light
- Sunshine Recorder, Make: National Instruments
- Angstrom Compensation Pyrheliometer, Make: National Instruments
- Pyranometer, Make: Kipp and Zonen Model: CNP 11
- Single Cylinder 4-Stroke Petrol Engine Test Rig with Electrical Dynamometer, Make: Apex Innovation
- Computerized Diesel Engine Test Rig, Make: Apex Innovation
- Laboratory Scale Pyrolyser with Temperature Control System
- Air Quality Monitor and Dust Track Aerosol Monitor (Nephelometer), Model: Q Trak CEE-717
- Auto-bomb Calorimeter, Make: Changsha Kaiyuan Instruments Co Ltd. Model: AC-5E
- Rotary Vacuum Evaporator Strike, Model: 102/B
- Oxidation Stability Apparatus, Model: Rancimat-743
- Dual Fuel Engine, Make: Apex Innovation, Model: P228
- Micro Hydro-Power Generating Equipment (Demonstration Unit)
- Fuel Cell Kit Stack, Make: H-Tech, Model: XX2 3002
- Integrated Biodiesel Production Plant, Make: Malnad Industries, Model
- Muffle Furnace, Labtech
- Biomethanation Plant
- Biogas analyzer, Make: Ambetronics Pvt Ltd. Model: IR 5000

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

- Drying model of CTC tea of local cultivar (T3E3)
- Characterization of biodiesel from two types of locally available seed oil
- Development of a robust and design independent generic thermal performance parameter and test procedure for solar cookers
- Development of high activity photo catalyst in the visible spectrum of solar radiation through basic hydrolytic and non-hydrolytic synthesis procedure using biotemplating as well as normal growth process
- Identification of new feedstocks suitable for thermochemical conversion process
- Agricultural and industrial biowaste to biochar as a soil amendment for sustainable agricultural production and mitigation of GHG emission
- Mapping of wind energy resource potential for the Tezpur region using Automatic Weather Station data
- Energy consumption pattern analysis in different sectors (households, industrial, commercial, service, market sector, transportation) of the five districts of NBPZ
- Design of an improved cook stove with provision of waste heat recovery
- Wind energy resource assessment of the NE region of India

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigators
Instrumented Solar Hot Air Generator (ISHAG) For Optimum Thermal Load in Tea Processing	DST	28.54 lakhs	3 years	D C Baruah
Optimizing Phosphate Recovery from Community Bio-Energy System: Low Cost Sustainable Fertilizer Production for Rural Community	UGC-UKIERI (Indo-UK)	15.72 lakhs	3 years	D C Baruah
Utilization of Bio-Energy By-Product for Value Addition and Nutrient Enhancement	EPSRC (Indo-UK)	4.39 lakhs	2 years	D C Baruah
Gasification Characteristics of Some Indigenous Woody and Non Woody Biomass for Partial Substitution of Conventional Tea Drying Energy	UGC	14.91 lakhs	3 years	D C Baruah (Co-PI)
Synthesis of Platform Biofuels from Renewable Sources Using Acid Modified Supported Ionic Liquid Catalysts	DST- (Indo-Finish Project)	34 lakhs	3 years	D Deka
Assessment and Analysis of the Plant Oil Feedstock Available in North-East India for Biodiesel Production	UGC	9.24 lakhs	3 years	D Deka
Synthesis and Characterization of Some Indigenous Tree Seed Based Biodiesel (ITSBD) Available in Assam, North East India	DST	33.60 lakhs	3 years	D Deka (Co-PI)
Strengthening Networking On Biomass Research and Biowaste Conversion – Biotechnology for Europe India Integration (SAHYOG)	DBT- (Indo-EU Project)	45.00 lakhs	3 years	R Kataki
Production Of Biochar from Various Bio-Wastes and Its Soil Application for Sustainable Soil Management and Mitigation of GHG Emission	UGC	12.95 lakhs	3 years	R Kataki
Synthesis and Characterization of Carbon Nano Materials(CNM) from Plan Based Precursors and Investigation of Their Utility as Fuel Cell Electrode	DST	25.69 lakhs	3 years	S K Samdarshi

PUBLICATIONS**In International and National Journals**

- Bora D K., D C Baruah, L M Das, and M K G Babu. 2012. Performance of diesel engine using biodiesel obtained from mixed feedstocks. *Renewable and Sustainable Energy Reviews*, 16 (8).
- Bora D K., D C Baruah. 2012. Assessment of tree seed oil bio-diesel: A comparative review based on biodiesel of a locally available tree seed, *Renewable and Sustainable Energy Reviews*, 16(8).
- Bora, P., J Boro, and D Deka. 2013. A study on the development of mesuaferrea l. seed oil based microemulsified fuel system. *International Journal of Emerging Technology and Advanced Engineering*, 3(3)
- Borah, M., R S Chutia, R Kataki. 2012. Oil spillage at Lakwa drilling site of Sivasagar district, Assam: evaluation of spilled crude oil as influenced by weathering processes. *International Journal of Engg. Sci. Research*, 3.
- Boro, J., L K Konwar, and D Deka. 2013. Vignaradiata (mung bean) ash as heterogeneous base catalyst for biodiesel production. *Journal of Bioprocess Engineering and Biorefinery*, (accepted).
- Boro, J., A J Thakur, and D Deka. 2012. Comparative study of waste shells derived catalysts and conventional catalysts for low cost environmentally benign biodiesel synthesis from waste cooking oil. *Journal of Sustainable Energy and Environment*, (in press).
- Boury, B., R G Nair, S K Samdarshi, T Makiabadi, and P H Mutin. 2012. Non-hydrolytic synthesis of hierarchical TiO₂ nanostructures using natural cellulosic materials as both oxygen donors and templates. *New Journal of Chemistry (RSC)*, 36 (11).
- Chakraborty, M., and D C Baruah. 2012. Investigation of oxidation stability of Terminaliabelerica biodiesel and its blends with petrodiesel. *Fuel Processing Technology*, 98 (1).
- Chutia, R S., R Kataki, and T Bhaskar. 2013. Thermogravimetric and decomposition kinetic studies of Mesuaferrea L. deoiled cake. *Bioresource Technology*, 1(39).
- Chutia, R S., M M Phukan, R Kataki and B K Konwar. 2012. Exploitation of Pongamiaglabradeoiled cake for alternate energy: Physico-chemical characterization and thermogravimetric studies. *Energy Sources*, (accepted).
- Chutia, R S., M Borah, T Nath, and R Kataki. 2012. Biomass fast pyrolysis: A sustainable renewable energy technology. *International Journal of Engg. Sci. Research*, 3.
- Dutta, P P., V Pandey, S Sen, A R Das, A Nath, and D C Baruah. 2013. Fuel characteristics of some indigenous plants. *International Journal of Emerging Technology and Advanced Engineering*, 3(3).
- Hatibaruah, D., D C Baruah, and S Sanyal. 2012. Microwave drying characteristics of Assam CTC tea (*Camellia assamica*). *Journal of Food Processing and Preservation*, 35(5).
- Hazarika, S., M Hiloidhari, and D C Baruah. 2012. Improving distribution efficiency of electrical network using geo-electrical options: a case study in a rural area of Assam (India). *Energy Efficiency*, 5(1).
- Hiloidhari, M., D Baruah, H Mahilary, and D C Baruah. 2012. GIS based assessment of rice (*Oryza sativa*) straw biomass as an alternative fuel for tea (*Camellia Sinensis* L) drying in Sonitpur district of Assam, India. *Biomass and Bioenergy*, 44.

- Hormozi, M. A., M A Asoodar, A Abdeslahi, and D C Baruah. 2013. The role of water pumping in energy efficiency of rice cropping systems in khuzestan province, Iran. *International Journal of Agriculture: Research and Review*, 3(1).
- Kataki, R. 2012. Youth employment opportunities in renewable energy. *International Journal of Engg. Sci. Research*, 3.
- Kataki, R., R S Chutia, and M Borah. 2012. Woody shrubs as a potential source of domestic energy in the eastern Himalayan regions of India. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, (accepted).
- Konwar, L J., J Boro, and D Deka. 2012. Doped waste shell as heterogeneous catalysts in the transesterification of waste cooking oil for biodiesel production. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, (accepted).
- Konwer L J., R S Chutia, J Boro, R Kataki, and D Deka. 2012. Biochar Supported CaO as heterogeneous catalyst for biodiesel production. *International Journal of Innovative Research & Development*, 1(7).
- Kusre, B. C., R R Haque, S C Patra, and D C Baruah. 2012. A GIS based approach for erosion hazard mapping of Umkhen sub watershed of Kopili river basin in northeastern region of India. *Journal of Indian Water Resources Society*, 30 (4).
- Lahkar, P. J., R K Bhamu, and S K Samdarshi. 2012. Enabling inter-cooker thermal performance comparison based on cooker opto-thermal ratio (COR). *Applied Energy*, 99.
- Nair, R G., J K Roy, S K Samdarshi, and A K Mukherjee. 2012. Mixed phase V doped titania shows high photoactivity for disinfection of Escherichia coli and detoxification of phenol. *Solar Energy Materials and Solar Cells*, 105.
- Nair, R G., A M Tripathi, S K Samdarshi. 2012. Impact of Ti-V ratio on the crystalline phase/visible light activity of TiV-oxide photocatalyst. *Environmental Progress and Sustainable Energy*, 31(1).
- Nath, T., M Das, and R Kataki. 2012. Ligno-cellulosic alcohol fermentation from bagasse. *International Journal of Engg. Sci. Research*, 3.
- Paul, S., B Rojbongshi, R G Nair, and S K Samdarshi. 2012. Organic photovoltaic cells using green-MWCNTs. *New Carbon Materials*, (accepted).
- Sahu, B K., M Hiloidhari, and D C Baruah. 2013. Global trend in wind power with special focus on the top five wind power producing countries. *Renewable and Sustainable Energy Reviews*, 19.

Conference proceedings

- Baruah, D., D C Baruah, and M Hiloidhari. Renewable energy in Assam: Present status and future scope. In Proceedings of the International Seminar and Workshop on Energy, Sustainability and Development 2012, Sibsagar College, Sibsagar, India.
- Dutta, P P., M J Gohain, R Kumar, and D C Baruah. A fluidized bed tea dryer powered with producer gas. In Proceedings of the International Seminar and Workshop on Energy, Sustainability and Development 2012, Sibsagar College, Sibsagar, India.

Kataki, S., M Hiloidhari, and D C Baruah. An investigation on Ipomoea (Ipomoea Carnea) concerning its availability and bio-energy generation potential in Assam. In Proceedings of the International Seminar and Workshop on Energy, Sustainability and Development 2012, Sibsagar College, Sibsagar, India.

Paul, S., and S K Samdarshi. Functionalized cut-MWCNT for OPV application. In Proceedings of the Indian Science Congress 2012, Bhubaneswar.

Books

Kataki, R., and A C Borah (eds). 2012. *Renewable Energy and Sustainable Development*. Guwahati: EBH Publishers.

Book chapters

Bora, P., J Boro, and D Deka. 2013. *Formulation and Characterization of Nonedible Oil Based Microemulsified Fuel*. In Suresh, S., and K Sudhakar. *Global Scenarion in Environment and Energy*. Hyderabad: BSP Publishers.

Chutia, R S., and R Kataki. 2012. *Biowastes as a Potential Feed-Stocks for Thermo-Chemical Conversion to Bio-oil and Bio-char*. In Kataki, R., and A C Borah. 2012. *Renewable Energy and Sustainable Development*. Guwahati: EBH Publishers.

Chutia, R S., and R Kataki. 2012. *Study of Pyrolytic Behavior of Deoiled Seed Cakes of P. glabra and M. ferrea by TGA for Their Potential Use as Biooil*. In Sanakr, G. et al. *Renewable Energy Technology: Issues and Prospects*. New Delhi: Excell India Publishers.

Kashyap, S., R Kataki, and A C Borah. 2012. *An Overview and Assessment of Indian Biomass Energy Sector Under the CDM*. In Kataki, R., and A C Borah. 2012. *Renewable Energy and Sustainable Development*. Guwahati: EBH Publishers.

Kataki, R., M Das, R S Chutia, and M Borah. 2012. *Biochar for C-sequestration and Soil Amelioration*. In Sanakr, G. et al. *Renewable Energy Technology: Issues and Prospects*. New Delhi: Excell India Publishers. Saikia, P., R Kataki, and D Konwer (eds). 2012. *Greenhouse Gas Emission from Solid Fuels in the Rural Households of Assam: A Case Study of the Sonitpur District*. In Kataki, R., and A C Borah. 2012. *Renewable Energy and Sustainable Development*. Guwahati: EBH Publishers.

Singh, M K., M Sadhan, and S K Atreya. Green building design: a step towards sustainable habitat, renewable energy and sustainable development. In Kataki, R., and A C Borah. 2012. *Renewable Energy and Sustainable Development*. Guwahati: EBH Publishers.

Patent

P K Choudhury. 2012. *Digital Occupancy Meter for Commercial Passenger Vehicle*, (applied).

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

D C Baruah attended the international seminar, International Seminar and Workshop on Energy, Sustainability and Development, organized by Sibsagar College, Sibsagar, 12-13 October, 2012.

D C Baruah attended the symposium, Indo-Finish symposium on Green Chemistry (Role of Catalysts on Production of Green Fuel), sponsored by DST India and Academy of Finland, organized at Department of Energy, Tezpur University, Tezpur, 1 February 2013.

D C Baruah attended the national conference, Energy scene in North East with Special Emphasis on Renewable Energy, organized by SECONE, Guwahati, Guwahati, 28 April, 2012.

D C Baruah attended the international workshop, International Workshop on Climate Change, Bangkok, 14-17 September, 2012.

TALKS BY THE FACULTY ABROAD AND IN INDIA

D C Baruah delivered a talk, Biomass Resource Assessment in NBPZ, Assam, at the national conference, Energy Scene in North East with Special Emphasis on Renewable Energy, organized by SECONE, Guwahati, Guwahati, 28 April 2012.

D C Baruah delivered a talk, Promoting Bio-diesel through Prevailing Socio-economic Situations: An Agro-Technological Analysis in Rural India, at the Indo-Finish Symposium, Green Chemistry (Role of Catalysts on Production of Green Fuel), sponsored by DST India and Academy of Finland, organized by the Department of Energy, Tezpur University, Tezpur, Tezpur, 1 February, 2013.

D C Baruah delivered a talk, Renewable energy in Assam: Present Status and Future Scope, at the international Seminar and Workshop, Energy, Sustainability and Development, organized by Sibsagar College, Sibsagar, Sibsagar, 12-13 October, 2012.

R. Kataki delivered a talk, Biomass and Biofuels for Sustainable Development, at the international symposium, Global Initiative for Sustainability and Human Development: Envisioning the Planetary Future, organized by the Global initiative for Sustainable Development and Planning (GISDP) and NECRD, IGNOU, Guwahati, Guwahati, 1-3 October, 2012.

S K Samdarsh delivered the talk, Pristine Mixed Phase Materials have Potential to Cross the Upper Limit of Activity of Photocatalyst? at the national seminar, Bio energy, organized by SSS-National Institute of Renewable Energy(SSS-NIRE), Kapurthala, Kapurthala, 7-8 December, 2012.

S K Samdarshi delivered a talk, Design and Performance Analysis of Solar Thermal Conversion Systems, at the national workshop, Modelling and Simulation of Renewable Energy Systems, organized by NIT, Jamshedpur, Jamshedpur, 18-22 July, 2012.

S K Samdarshi delivered a talk, Developments in Solar Photocatalytic Materials and Systems, at the international seminar and workshop, Energy, Sustainability and Development (ISWESD 2012), organized by Sibsagar College, Sibsagar, Sibsagar, 12-14 October, 2012.

S K Samdarshi delivered a talk, Metal-oxides and Carbon Nano-materials for Energy Applications, in the national workshop, Modelling and Simulation of Renewable Energy Systems, organized by NIT, Jamshedpur, Jamshedpur, 18-22 July, 2012.

S K Samdarshi delivered a talk, Strategies for Improvement, at the Performance of Photoactive Metal-oxide Nano Materials, in the Indo-Finnish Symposium, Green Chemistry, organized by Tezpur University, Tezpur, Tezpur, 1 February, 2013.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Indo-Finnish symposium on Green Chemistry (Role of catalysts on production of green fuel), sponsored by DST India and Academy of Finland, 1 February, 2013.

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

Moonmoon Hiloidhari (Research scholar), received the Fulbright-Nehru Doctoral and Professional Research Fellowship, 2013-14 for conducting research work in University of California, Davis, USA.

Moonmoon Hiloidhari (Research scholar), Sampriti Kataki (Research scholar), and Dipam Patowary (M.Tech) visited University of Nottingham, UK as academic visitors for the period, 10-20th February, 2013

DISTINGUISHED VISITORS TO THE DEPARTMENT

Dr Bruno Boury, Montpellier University, France

Prof H P Garg, Former Head, Centre for Energy Studies, IIT Delhi

Dr Helen West, School of Bioscience, University of Nottingham, UK

Prof Michele Clarke, School of Geography, University of Nottingham, UK

Dr N S Rathore, Faculty of Engineering, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan

Dr Sarah Martin, Dr. Joel Chaney, Dr. Paolo Matelloni, Dr. Debadayita Raha, Post Doctoral Fellow, University of Nottingham, UK

Dr Trevor Drage, School of Engineering, University of Nottingham, UK

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- GATE: 12

THE FACULTY OF THE DEPARTMENT**Professors**

D C Baruah, PhD (Punjab)

Head of the Department

Specialization/Areas of interest: Energy Management, Renewable Energy

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S K Samdarshi, PhD (IIT-Delhi)

Specialization/Areas of interest: Solar Energy, Energy Materials and Energy Education

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D Deka, PhD (Tezpur)

Specialization/Areas of interest: Bio energy, Energy and Environment

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Associate Professors

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Specialization/Areas of interest: Bio fuels, Biochar & Environment, Energy Environment interface

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Assistant Professor

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Specialization/Areas of interest: Renewable Energy, Energy Management

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P K Choudhury, MTech (Tezpur)

Specialization/Areas of interest: Energy Conservation, Integration of Renewable Energy Systems

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P Kalita, MTech (IIT Guwahati)

Specialization/Areas of interest: Two Phase Flow and Heat Transfer, Combustion and Gasification

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School of Engineering

DEPARTMENT OF FOOD ENGINEERING & TECHNOLOGY

THE DEPARTMENT

The Department of Food Engineering and Technology of Tezpur University is one of the six constituent Departments under the School of Engineering. The main objective of the Department is to create trained and skilled human resources to cater to the needs of the rapidly growing food processing sector. The Department (earlier known as Department of Food Processing Technology) was opened in 2006 with a two-year MSc programme in Food Processing Technology. The Department is currently offering an MTech, a BTech, an Integrated MTech, and a PhD programme in Food Engineering and Technology. A number of projects sponsored by various funding agencies like UGC, MoFPI, DST, DBT, DRDO are being carried out by the Department.

ACADEMIC PROGRAMMES

- BTech in Food Engineering & Technology
- MTech in Food Engineering & Technology
- Integrated MTech in Food Engineering & Technology
- PhD in Food Engineering & Technology

STUDENT INTAKE

Programme	Student Intake
BTech in FET	30
MTech in FET	18
Integrated MTech in FET	12
PhD in FET	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- Aas
- Rapid Visco Analyser
- Texture Analyzer
- Hplc
- Uv-Vis Spectrophotometer
- Ft-Ir Spectrometer
- Pasteurizer
- Packaging And Packaging Material Testing Equipment
- Bio-Safety Cabinet
- Bod Incubator
- Autoclave
- Gel Documentation System
- Fermentor
- Trinocular Microscope
- Ice Maker
- Hunter Lab Color Meter
- Automated Microscope

- Refrigerated Centrifuge
- Variable Speed Rotor Mill
- Ultra Pure Water Purification System
- Laboratory Tray Drier
- Plate Type Heat Exchanger
- Unsteady State Heat Transfer Apparatus
- Plate & Frame Filter Press
- Single Effect Evaporator
- Crystallization Unit
- Liquid-Liquid Extraction
- Spray Extraction Column
- Fibra Plus
- Hot Air Oven
- Colony Counter
- Vacuum Filtration Assembly
- Digital Water Bath
- Shaking Water Bath
- Muffle Furnace
- Vacuum Oven with Vacuum Pump

RESEARCH PROJECTS: ONGOING AND NEW

SI No	Name of the Project	Funding Agency	Amount in INR	Duration	Principal Investigator
1	Development of Health Promoting Extruded Rte Breakfast Cereal Incorporating <i>Choukua</i> rice and <i>Bhimkol</i> Banana of Assam along with Carambola <i>Pomace</i>	Ministry of Food Processing Industries, New Delhi	40,32,000.00	3 years	Charu Lata Mahanta
2	Characterization of Starch Properties in Traditional Rice Products of Assam and Development of a Small Scale Processing Unit for the Products	DST	23,76,000.00	3 years	Charu Lata Mahanta
3	Development of Continuous Wet cum Dry Grinder for Grinding Waxy Rice for Use in the State of Assam (IDP/IND/16/2012) (CFTRI+ Tezpur University)	DST	42,40,000	3 years	Charu Lata Mahanta
4	Design and Development of Vacuum Frying System for the Production of Healthy Snack Products (IDP/IND/17/2012) (CFTRI+ Tezpur University)	DST	34,96,000.00	3 years	Charu Lata Mahanta
5	Preparation, Demonstration and Popularization of Various Food Products from Locally Available Post-Harvest Food Materials For Welfare of Rural Population of the Sonitpur District of Assam	DBT, New Delhi	7,22,000.00	3 years	S C Deka
6	Effect of Processing on Biochemical Compositions and Production of Resistant Starch (Rs), Nutraceuticals and Value Added Products from Culinary Banana (<i>Musa Abb</i>) <i>Kachkal</i> of Northeast India	DRDO, New Delhi	14,53,000.00	3 years	S C Deka
7	Quality Improvement of the Traditional Methods of Rice Beer Production by the Tribal People of Northeast India	MoFPI, New Delhi	78,68,534.00	2 years	S C Deka

8	Studies on Functional Properties of the Dominant Microflora Found in Rice Beer of Assam	MoFPI, New Delhi	46,02,000.00	2 years	S C Deka
9	Development Of Enzyme Based Extraction Process for Improving Quality and Recovery of Starch from Different Varieties of <i>Colocasia Esculenta</i> (Arbi) of Assam For Food Use	MoFPI, New Delhi	26,00,000.00	2 years	Nandan Sit
10	Processing and Packaging of Various Edible Bamboo Shoot Species Growing in Different Agro-Ecological Regions of Assam	UGC, New Delhi	9,51,800.00	3 years	L S Badwaik
11	Development of Ready to Reconstitute <i>Misti Dahi Powder</i>	MoFPI, New Delhi	15,97,000.00	3 years	D K Seth
12	Studies on Functional Properties of the Dominant Microflora Found in Rice Beer of Assam	MoFPI, Gol	46,02,000.00	2 years	R K Duary
13	Osmotic Dehydration and Microwave Vacuum Drying of <i>Kachkal</i> Banana	MoFPI, New Delhi	21,00,000.00	2 years	Kshirod Kumar Dash

PUBLICATIONS

In International and National Journals

- Achuthan, A A., R K Duary, M Anupama, H Panwar, H Kumar, V K Batish, and S Grover. 2012. Antioxidative potential of indigenous lactobacilli isolated from the gut of Indian people. *Molecular Biology Reports*, 39(8).
- Badwaik, L. S., P K Borah, K Borah, N Sit, and S C Deka. 2012. Antimicrobial activity of indigenous medicinal plant extract on spoilage microbes present in bamboo shoots. *International Journal of Agriculture and Food Science Technology*, 3(3).
- Badwaik, L S., S Choudhury, P K Borah, and S C Deka. 2012. Optimization of osmotic dehydration process of bamboo shoots in mixtures of sucrose and sodium chloride solutions. *Journal of Food Processing and Preservation*. (DOI:10.1111/j.1745-549.2012.00807.x).
- Badwaik, L. S., S Choudhury, P K Borah, N Sit, and S C Deka. 2013. Comparison of kinetics and other related properties of bamboo shoot drying pretreated with osmotic dehydration. *Journal of Food Processing and Preservation*. (DOI: 10.1111/jfpp.12077).
- Badwaik, L S., K Prasad, and D Seth. 2012. Optimization of ingredient levels for the development of peanut based fiber rich pasta. *Journal of Food Science and Technology*. (DOI 10.1007/s13197-012-0779-8).
- Chandran, A., R K Duary, S Grover, and V K Batish. 2013. Relative expression of bacterial and host specific genes associated with probiotic survival and viability in the mice gut fed with *Lactobacillus plantarum* Lp91. *Microbiological Research*, (accepted).
- Das Purakayastha, M., D Kalita, V K Das, C L Mahanta, A J Thakur, and M K Chaudhuri. 2012. Effect of L-ascorbic acid addition on micro-filtered coconut water: Preliminary quality prediction study using ¹H-NMR, FTIR and GC-MS. *Innovative Food Science & Emerging Technologies*, 13.
- Das Purakayastha, M., D Kalita, N K Mahnot, C L Mahanta, M Mandal, and M K Chaudhuri. 2012. Effect of L-ascorbic acid addition on the quality attributes of micro-filtered coconut water stored at 4 °C. *Innovative Food Science & Emerging Technologies*, (DOI: 10.1016/j.ifset.2012.04.007).
- Das, D K, H Dutta, and C L Mahanta. 2012. Development of a rice starch-based coating with antioxidant and microbe-barrier properties and study of its effect on tomatoes stored at room temperature. *Food Science and Technology*, 50.
- Dash, K K., S K Das, and S C Deka. 2012. Process modeling for shelf life of the microwave puffed rice. *International Journal of Agriculture and Food Science Technology*, 3(3).
- Dash, K K., T K Goswami, and S C Deka. 2012. Modeling for the modified atmosphere packaging of Sapota fruit. *Agricultural Engineering International*, 14(2).

- Duary, R K., V K Batish, S Grover. 2012. Relative gene expression of bile salt hydrolase and surface proteins in two putative indigenous *Lactobacillus plantarum* strains under *in vitro* gut conditions. *Molecular Biology Reports*, 39(3).
- Duary, R K., M A Bhausaheb, V K Batish, and S Grover. 2012. Anti-inflammatory and immunomodulatory efficacy of indigenous probiotic *Lactobacillus plantarum* Lp91 in colitis mouse model. *Molecular Biology Reports*, 39(4).
- Dutta, H., and C L Mahanta. 2012. Laboratory Process Development and Physicochemical Characterization of a Low Amylose and Hydrothermally Treated Ready-to-Eat Rice Product Requiring No Cooking. *Food and Bioprocess Technology*, (DOI 10.1007/s11947-012-1037-9).
- Dutta, H., and C L Mahanta. 2012. Effect of hydrothermal treatment varying in time and pressure on the properties of the parboiled rices with different amylose content. *Food Research International*, 49.
- Kalita, D., N Kaushik, and C L Mahanta. 2012. Physicochemical, morphological, thermal and IR spectral changes in the properties of waxy rice starch modified with vinyl acetate. *Journal of Food Science and Technology*, (DOI: 10.1007/s13197-012-0829-2).
- Konwarh, R., S Pramanik, D Kalita, C L Mahanta, N Karak. 2012. Ultrasonication – a complementary ‘green chemistry’ tool to biocatalysis: a laboratory-scale study of lycopene extraction. *Ultrasonics Sonochemistry*, 19.
- Rashmi, H M., N Rokana, R K Duary, H Panwar, V K Batish, and S Grover. 2012. Management of metabolic syndrome through probiotic and prebiotic interventions. *Indian Journal of Endocrinology and Metabolism*, 16(1).
- Saikia, S., H Dutta, D Saikia, C L Mahanta. 2012. Quality characterisation and estimation of phytochemicals content and antioxidant capacity of aromatic pigmented and non-pigmented rice. *Food Research International*, 46.
- Seth D., and R Gopirajah. 2012. Development of extruded snacks using soy, sorghum, millet and rice blend-A response surface methodology approach. *International Journal of Food Science & Technology*, 3(3).
- Sit, N., H Gayan, L S Badwaik, and S C Deka. 2012. Development of protein rich rts beverage by incorporating whey in carambola juice. *International Journal of Agriculture and Food Science Technology*, 3(3).
- Sit, N., S Misra, and S C Deka. 2013. Physicochemical, functional, textural and colour characteristics of starches isolated from four taro cultivars of North-East India. *Starch/Stärke*, (accepted).

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- C L Mahanta attended the International Conference, Development Of Backward Regions Through Food Processing: Preparing A Roadmap, Allahabad University, 27-28 December, 2012.
- S C Deka attended the International Conference, Innovations in Food Processing, Value Chain Management & Food Safety (IFpvs), National Institute of Food Technology Entrepreneurship and Management Kundli, Haryana, 10-11 January 2013.
- Brijesh Srivastava attended the Workshop, Intellectual Property Rights Capturing Innovations for IPR Protection, Tezpur University, 8 August, 2012.
- Brijesh Srivastava attended the national workshop, Advances in Applied Microbiology and Bioprocess Engineering with Special Reference to Petroleum Biotechnology, organised by ONGC-Centre for Petroleum Biotechnology, Tezpur University, 23-24 August, 2012.
- Nandan Sit attended the national workshop, Advances in Applied Microbiology and Bioprocess Engineering, Tezpur University, 8 August 2012.
- Nandan Sit attended the workshop, Intellectual Property Rights Sensitization, Tezpur University, 23-24 August 2012.

- Nandan Sit attended the national seminar, Recent Advances in Microbial Biotechnology and Molecular Evaluation, Tezpur University, 1-2 march, 2013.
- Nandan Sit attended the international conference, Food Processing Technologies - Challenges and Solutions for Sustainable Food Security, IICPT, Thanjavur, 4-5 January, 2013.
- P Mishra (Mrs) attended an orientation course, FPT at the University of Allahabad, 19-21 July, 2012.
- P Mishra (Mrs) attended the International Conference, Agriculture, Foods Sciences & Environmental Technology for Sustainable Global Development at JNU, New Delhi, 28-29 October, 2012.
- P P Mishra attended the international conference, Food Processing Technologies - Challenges and Solutions for Sustainable Food Security, IICPT, Thanjavur, 4-5 January, 2013.
- P Mishra (Mrs) attended the International Conference, Development Of Backward Regions Through Food Processing: Preparing a Roadmap, Allahabad University, 27-28 December, 2012.
- P Mishra (Mrs) attended the International Conference, Food Processing Technologies- Challenges and Solutions for Sustainable Food Security at IICPT, Thanjavur, 4-5 January 2013.
- P Mishra (Mrs) attended the International Conference, Perspective and Challenges in Chemical and Biological Sciences, Guwahati, 28-30, January 2012.
- L S Badwaik attended the International Conference, Food Processing Technologies- Challenges and Solutions for Sustainable Food Security at IICPT, Thanjavur, 4-5 January 2013.
- L S Badwaik attended the International Conference, Agriculture, Foods Sciences & Environmental Technology for Sustainable Global Development at JNU, New Delhi, 28-29 October 2012.
- L S Badwaik attended the Workshop, Advances in Applied Microbiology and Bioprocess Engineering at Department of Molecular Biology and Biotechnology, Tezpur University, 23-24 August 2012.
- L S Badwaik attended the Professional Development Programme, Science Communication Through Mass Media, Tezpur University, 1-6 October 2012.
- L S Badwaik attended the Workshop, Capturing Innovations for IPR Protection, Tezpur University, 8 August 2012.
- R K Duary attended the International Symposium, Probiotics for Human Health-New Innovations and Emerging Trends, Habitat Centre, New Delhi, India, August 27-28, 2012.
- R K Duary attended the International Conference, Innovations In Food Processing, Value Chain Management And Food Safety, organized by National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonapat, Haryana, 10-11, January 2013.
- R K Duary attended the International Conference, Agriculture, Foods Sciences & Environmental Technology for Sustainable Global Development at JNU, New Delhi, 28-29 October 2012.
- R K Duary attended the National Seminar, Recent Advances in Microbial Biotechnology and Molecular Evaluation, Tezpur University, 1-2, March 2013.
- R K Duary attended the International Conference, Perspective and Challenges in Chemical and Biological Sciences, Guwahati, 28-30 January 2013.

K K Dash attended the International Conference, Agriculture, Foods Sciences & Environmental Technology for Sustainable Global Development at JNU, New Delhi, 28-29 October 2012.

K K Dash attended the Workshop, High Pressure Processing, IIT Kharagpur, 22 March 2013.

K K Dash attended the National Seminar, Recent Advances in Microbial Biotechnology and Molecular Evaluation, Tezpur University, 1-2 March 2013.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof H N Mishra, IIT Kharagpur, West Bengal

Prof P P Srivastava, IIT Kharagpur, West Bengal

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

R K Duary (Faculty member) was awarded Jawaharlal Nehru Award by Indian Council of Agricultural Research on his outstanding Doctoral thesis on Agricultural and Allied Sciences, 16 July 2012.

R K Duary (Faculty member) was awarded Second Best Paper Award (Young Researchers Group) on his paper *Potentiality of two promising putative indigenous strains of probiotic lactobacilli against inflammatory disorders* at the the International Symposium on Probiotics for Human Health-New Innovations and Emerging Trends, organized by Probiotic Association of India, 27-28 August, 2012, Habitat Centre, New Delhi.

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- GATE: 8
- NET: 1

THE FACULTY OF THE DEPARTMENT

Professors

Charu Lata Mahanta, MSc (GBPUA&T), PhD (CFTRI)

Specialization/Areas of interest: Food Science, Rice Processing, Food Analysis, Food Quality, Product Development

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Sankar Chandra Deka, MSc (AAU), PhD (HAU)

Head of the Department

Specialization/Areas of interest: Food Chemistry, Food Quality, Fermented Foods

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Associate Professor

Manuj Kumar Hazarika, MTech & PhD (IIT, KGP)

Specialization/Areas of interest: Dairy & Food Engineering, Transport Processes, Process Modeling

E-mail: mkhazarika@tezu.ernet.in

Brijesh Srivastava, MTech, PhD (IIT, Kharagpur)

Specialization/Areas of interest: Process & Food Engineering, Fruits & Vegetable Processing and Machineries, Drying & Dehydration, Unit Operations in Food Engineering.

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Assistant Professors

Nandan Sit, MTech (GBPUA&T)

Specialization/Areas of interest: Food Engineering, Food Biotechnology, Food Processing

E-mail: nandan@tezu.ernet.in

Poonam Mishra (Mrs), MTech (HBTI, Kanpur)

Specialization: Food Technology

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Laxmikant S Badwaik, MTech (SLIET, Longowal)

Specialization/Areas of interest: Food Engineering & Technology, Fermentation Technology

E-mail: badwaik@tezu.ernet.in

Dibyakanta Seth, MTech (IIT Kharagpur)

Specialization/Areas of interest: Dairy & Food Engineering, Dairy Technology, Unit operations & Transport Process

E-mail: dibya05@tezu.ernet.in

Rajkumar Duary, MSc & PhD (NDRI Karnal)

Specialization/Areas of interest: Dairy Microbiology, Molecular Biology

E-mail: duary@tezu.ernet.in

Kshirod Kumar Dash, MTech (IIT, Kharagpur)

Specialization/Areas of interest: Food process Modeling, Dairy and Food Engineering, Unit Operations in Food Engineering

E-Mail: kshirod@tezu.ernet.in

Amit Barun Das, MTech, MS (IIT, Kharagpur)

Specialization/Areas of interest: Food Process Design, Mechanical Operations in Food Engineering, Food Preservation

E-Mail: amittu@tezu.ernet.in

*School of Engineering***DEPARTMENT OF MECHANICAL ENGINEERING****THE DEPARTMENT**

The prime objective of the Department of Mechanical Engineering, which was established in 2006, has been to promote quality technical education and to produce human resource capable of contributing to both industry and academics. In view of the present competitive market resulting from globalization, and the fast technological developments, the Department is committed to continuous improvement of the students in knowledge and skills. Presently the Department is offering a BTech and a PhD Programme in Mechanical Engineering, and is going to offer an MTech Programme from the academic year of 2013-14.

ACADEMIC PROGRAMMES

- BTech in Mechanical Engineering
- PhD

STUDENT INTAKE

Programme	Student Intake
BTech in Mechanical Engineering	52
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- Radial Drilling Machine
- MIG Welding Set up
- Universal Testing Machine
- Universal Milling Machine
- Hydraulic Test Bench and Test-apparatus
- Fluid Mechanics Lab
- Pedestal Grinding Machine
- High Precision Production Lathe Machine
- Shaping Machine
- Horizontal Milling Machine
- Vertical Milling Machine
- Power Hacksaw Machine
- Precise Roughness Tester
- Pro-E Software
- Dynamics of Machines Lab
- Hardness Testing Machines
- Gyroscope
- Whirling of Shaft Apparatus
- Sophisticated Vibration Apparatus
- Surface Grinding Machine
- Roller Bending Machine
- CNC Lathe

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
Processing and Mechanical Property Evaluation of Micro alloyed 2219 Al Alloys	DST	23.00 lakhs	3 years	S Banerjee
Gasification Characteristics of Some Indigenous Woody and Non Woody Biomass for Partial Substitution of Conventional Tea Drying Energy	UGC	14.90 lakhs	3 years	P P Dutta
Development of an Innovative CHP Experimental Setup for Tea Manufacturing in North east India	DST	18.45 lakhs	3 years	P P Dutta
An Experimental Set-up for the Conversion of Biomass to Bio-oil by Pyrolysis Technique	TU (start up grant)	1.50 lakhs	1 year	M Bardalai
Study Of Performance Of A Turbocharged Diesel Enginefuelled with Some Indigenous Tree Seed Based Bio-Diesels Available in North Eastern Region of India	DST	33.60 lakhs	2 years	T K Gogoi
High Temperature Metal Melting Furnace	TU (start up grant)	1.50 lakhs	1 year	S Banerjee

PUBLICATIONS**In International and National Journal**

- Ahmed, N., S Sengupta and D Datta. 2013. An exact analysis for mhd free convection mass transfer flow past an oscillating plate embedded in a porous medium with sores effect. *Chemical Engineering Communications*, 200(4).
- Banerjee, S., P S Robi, and A Srinivasan. 2012. Deformation processing maps for control of microstructure in Al-Cu-Mg Alloys micro alloyed with Sn. *Metallurgical and Materials Transactions*, 43A.
- Banerjee, S., P S Robi, and A Srinivasan. 2012. Prediction of hot deformation behaviour of Al-5.9% ,Cu-0.5% Mg Alloys with trace additions. *Journal of Material Science*, 47(2).
- Das, R., A Mallick, and K T Ooi. 2013. Inverse estimation of heat transfer coefficient and thermal conductivity in a conductive-convective and radiative fin. *J. Heat & Mass Transfer*, DOI10.1007/s00231-013-1146-7.
- Das, R., and P P Dutta. 2012. Application of simulated annealing for simultaneous estimation of parameters of cylindrical fin. *Numerical Heat Transfer*, 47(2).
- Datta, D., and J R Figueira. 2012. Some convergence-based m-ary cardinal metrics for comparing performances of multi-objective optimizers. *Computers & Operations Research*, 39(7).
- Datta, D., and S Dutta. 2012. A binary-real-coded differential evolution for unit commitment problem. *International Journal of Electrical Power and Energy Systems*, 42(1).
- Dutta, P P., A Keot, A Gogoi, A. Bhattachaejee, J. Saharia, N. Sharma and D.C. Baruah. 2013. A study on some techniques for improving thermo hydraulic performance of a solar air heater. *International Journal of Emerging Technology and Advanced Engineering*, 3(3).
- Dutta, P P., V Pandey, S Sen, A R. Das, A Nath, and D C Baruah. 2013. Fuel characteristics of some indigenous plants. *International Journal of Emerging Technology and Advanced Engineering*, 3(3).
- Gogoi, T K., and R Das. Inverse analysis of an internal reforming solid oxide fuel cell system using simplex search method. *Applied Mathematical Modelling*, (in press).
- Gogoi, T K. 2013. Exergy analysis of a diesel engine operated with *Koroch* seed oil methyl ester and its diesel fuel blends. *Int. J. Exergy*, 12(2).

- Kirtania, S., and D Chakraborty. 2012. Multi-scale modeling of carbon nanotube reinforced composites with a fiber break. *Materials and Design*, 3.
- Mallick, A., K S Tun, and M Gupta. 2012. Deformation behaviour of mg/y2o3 nanocomposite at elevated temperatures. *Material Science and Engineering - A*, 551.
- Mallick, A. 2013. Effect of second phase mobile and immobile particles on polycrystalline grain growth: a phase field approach. *Computational Materials Science*, 67.
- Robi, P S., S Banerjee, and A Srinivasan. 2012. Deformation mechanism maps for Al-Cu-Mg Alloys micro-alloyed with tin. *Advanced Materials Research*, 410.

Conference proceedings

- Banerjee, S., A Chakraborty, J Konwar, L Gogoi, and P Agarwal. Artificial neural network modelling to predict high temperature flow stress as a function of composition in micro alloyed Al-Cu-Mg. In Proceedings of Processing and Fabrication of Advanced Materials (PFAM XXI-2012), IIT Guwahati, Guwahati.
- Banerjee, S., A Deka, and I Parashar. Constitutive modelling to predict high temperature flow stress as a function of strain in Al-Cu-Mg Alloy. In Proceedings of Processing and Fabrication of Advanced Materials (PFAM XXI-2012), IIT Guwahati, Guwahati.
- Banerjee, S., N N Ahmed, P Bhuyan, and S Baruah. Computational modelling of high temperature processing maps for micro alloyed Al-Cu-Mg alloys using artificial neural networks. In Proceedings of Intelligent Manufacturing Systems (ICIMS 2012), Thanjavur, India.
- Bardalai, M., and D K Mahanta. A comparative study of teak tree and rice husk available in Assam as the feedstock for the production of pyrolysis oil. In Proceedings of Frontiers in Science and Technology, 58th Annual Technical Session: 2013, Assam Science Society, Guwahati.
- Dutta, P P., A Keot, A Gogoi, A Bhattachaejee, J Saharia, N Sharma, and D C Baruah. A study of thermo hydraulic performance of solar air heater. In Proceedings of Energy Resources and Technologies for Sustainable Development-2013, Hyderabad, 2013.
- Dutta, P P., and D C Baruah. A fluidized bed tea dryer powered with producer gas. In Proceedings of the international seminar cum workshop, Energy Sustainability and Development, Sibasagar College, Sibasagar, 2012.
- Dutta, P P., A Keot, A Gogoi, and A Bhattacharjee. Theoretical prediction of top loss coefficient of a double glazed pin fin solar air heater. In Proceedings of the national seminar, Frontiers in Science and Technology, 58th Annual Technical Session, Assam Science Society, Guwahati, 2013.
- Dutta, P P., J Saharia, N Sarma, D C Baruah, R Das, and B Dutta. Studies of some solar thermal collector. In Proceedings of the international seminar cum workshop, Energy Sustainability and Development, Sibasagar College, Sibasagar, 2012..
- Dutta, P P., V Pandey, S Sen, and A R Das. Gasification studies of some locally available biomass for thermal applications. In Proceedings of the national seminar, Frontiers in Science and Technology, 58th Annual Technical Session, Assam Science Society, Guwahati, 2013.
- Dutta, P P., V Pandey, S Sen, A R Das, A Nath, and D C Baruah. Fuel characteristics of some indigenous plants. In Proceedings of the international conference, Energy Resources and Technologies for Sustainable Development, Hyderabad, 2013.
- Dutta, Polash P. Finite element modelling and simulation on laser bending of d36 shipbuilding steel sheet. In Proceedings of the national conference, Theoretical Physics (NCTP), Tezpur University, Tezpur, 2012.
- Gogoi, T K., A K Sarma, P S Misra, and S T Haque. Combustion analysis of Jatrophia methyl ester and its ethanol and acetone blends in a diesel engine. In Proceedings of the international conference, Energy Resources and Technologies for Sustainable Development, Hyderabad, 2013.
- Gogoi, T K., N K Sarma, A A Choudhury and T. Talukdar. First law analysis of diesel engine performance using diesel and biodiesel fuel. In Proceedings of the international conference, Energy Resources and Technologies for Sustainable Development, Hyderabad, 2013.

- Gogoi, T K., S Sarma, and S Borthakur. Simulation of a hybrid solid oxide fuel cell-gas turbine system. In Proceedings of the international conference, Energy Resources and Technologies for Sustainable Development, Hyderabad, 2013.
- Kalita, P., M A Sultan, S Gayan, and G Borgohain. Effect of limiter on the performances of higher order schemes for 1d shock-tube problem. In Proceedings of the national conference, Theoretical Physics (NCTP), Tezpur University, Tezpur, 2012..
- Kalita, P and A K Dass. Aspects of computation of 2d planar and axisymmetric high-speed flows through nozzles. In Proceedings of the 4th International Congress on Computational Mechanics and Simulation, IIT Hyderabad, Hyderabad, 2012.
- Kalita, P., B Sarmah, D Kalita, and R Kumar. staggered grid computation of laminar flow through a rectangular duct with heating from bottom wall. In Proceedings of the national conference, Theoretical Physics (NCTP), Tezpur University, Tezpur, 2012..
- Kirtania, S., and D Chakraborty. Multi-scale analysis of carbon Nanotube (CNT)-reinforced metal matrix composites with a broken fiber. In Proceedings of the 4th International Conference on Recent Advanced in Composites Materials (ICRACM), Goa, 2013.
- Nath, P K., D Datta, and A C Paul. Hardware-software codesign of embedded system using a binary version of genetic algorithm - *a case study on jpeg encoder using a metaheuristic approach*. In Proceedings of the International Joint Conference on Emerging Intelligent Sustainable Technologies (EISTCON 2012), Bangalore, 2012.
- Pandey, M and T K Gogoi. Energy and exergy analysis of reheat regenerative vapour power cycle. In Proceedings of the international conference, Energy Resources and Technologies for Sustainable Development, Hyderabad, 2013.
- Roy, K and P Kalita. Higher order accurate computation of supersonic flow through a ramped channel. In Proceedings of the national conference. In Proceedings of the national conference, Theoretical Physics (NCTP), Tezpur University, 8-12 February, 2013.

Book chapter

- Kirtania, S and D Chakraborty. 2013. *Stress Transfer Characterizations at Fiber Break in Carbon Nanotube-Reinforced Composites*. In Giri, P. K. et al. *Advanced Nanomaterials and Nanotechnology*. Berlin, Heidelberg: Springer-Verlag.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- S Banerjee attended the workshop, Capturing Innovations for IPR Protection, organized by Tezpur University on Intellectual Property Rights (IPR), Tezpur University, 8 August, 2012.
- T K Gogoi attended the International conference, Energy Resources and Technologies for Sustainable Development, Besu, West Bengal, 7-9 February, 2013.
- T K Gogoi attended the national conference, Energy Scene in India with Special Emphasis on Renewable Energy, Guwahati, 28 April, 2012.
- M Bardalai attended a national seminar, Hydrocarbon Industry Growth–Prospects and Challenges in North East, IOCL Guwahati Refinery, Guwahati, 21-22 January, 2013.
- M Bardalai attended a two-day workshop, Akash for Education, conducted by IIT Bombay at Tezpur University, 10-11 November, 2012.

M Bardalai attended the national seminar, Frontier in Science and Technology, Guwahati University, 8-9 March, 2013.

P Haloi attended two-day national workshop, Inup Familiarization Especially for N-E India, 28-29 September, IIT-Guwahati, 2012.

P Kalita attended the workshop, Capturing Innovations for IPR Protection, organized by Tezpur University on Intellectual Property Rights (IPR), Tezpur University, 8 August, 2012.

P Kalita attended the workshop, Research Issues, organized by IQAC, Tezpur University, 18-19 March, 2013.

P P Dutta attended the national workshop, Energy Scene in North East with Special Emphasis on Renewable Energy, SECONE Society, Guwahati, 28 April, 2012.

P P Dutta attended the international conference, Energy Resources and Technologies for Sustainable Development, Besu, West Bengal, 7-9 February, 2013.

P P Dutta attended the workshop, Capturing Innovations for IPR Protection, organized by Tezpur University on Intellectual Property Rights (IPR), Tezpur University, 8 August, 2012.

S Kashyap attended the seminar seminar, Hydrocarbon Industry Growth: Prospects and Challenges in North East, Indian Oil Refinery and Petrotech, Guwahati, 21-22 January, 2013.

S Kashyap attended a 2-day ISTE workshop, Akash for Education, conducted by Indian Institute of Technology, Bombay, 10-11 November, 2012.

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- GATE: 36

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS

A Mallick's name figured in the list of approved candidates for Visiting Fellowship in Canadian Government Laboratories.

S Banerjee was awarded DST-SERC, Fast Track Young Scientist Scheme (FAST) for 2013-2016 in the discipline of Engineering Sciences.

P P Dutta was awarded DST-SERC, Fast Track Young Scientist Scheme (FAST) for 2012-2015 in the discipline of Engineering Sciences.

P P Dutta was conferred Chartered Engineer by the Institution of Engineers (India) in December 2012

THE FACULTY OF THE DEPARTMENT

Professors

Syamanta M Hazarika, PhD (Leeds, UK)

(HoD till 6 June 2012)

Specialization/Areas of interest: Knowledge Representation and Reasoning, Cognitive Robotics

E-mail: smh@tezu.ernet.in

Associate Professors

Tapan Kumar Gogoi, PhD (Tezpur)

Specialization/Areas of interest: Thermal Energy and Environment Engineering

E-mail: tapan_g@tezu.ernet.in

Ashis Mallick, PhD (Singapore)

Specialization: Mechanics of materials

E-Mail: mallick@tezu.ernet.in

Dilip Datta, PhD (IIT Kanpur)
(Head of the Department)
Specialization: Optimization/Design
E-Mail: ddatta@tezu.ernet.in

Assistant Professors

Partha Pratim Dutta, MTech (Tezpur)
Specialization/Areas of interest: Energy Technology
E-mail: ppdutta@tezu.ernet.in

Paragmoni Kalita, MTech (BHU)
Specialization/Areas of interest: Heat Power Engineering
E-mail: paragmk@tezu.ernet.in

Polash Pratim Dutta, ME (BIT Mesra)
Specialization/Areas of interest: CAD/CAM
E-mail: polashd@tezu.ernet.in

Sushen Kirtania, MTech (IIT Guwahati)
Specialization/Areas of interest: Machine Design
E-mail: sushen@tezu.ernet.in

Prabin Haloi, ME (Gauhati)
Specialization/Areas of interest: Thermal Engineering and Heat Transfer, Operation Research
E-mail: haloi_p@tezu.ernet.in

Sachin Kumar Singh, PhD (IIT Guwahati)
Specialization/Areas of interest: Machine Design
E-mail: sachin@tezu.ernet.in

Sanjib Banerjee, PhD (IIT Guwahati)
Specialization/Areas of interest: Materials and Manufacturing
E-mail: sanjibb@tezu.ernet.in

Monoj Bardalai, ME (Gauhati)
Specialization/Areas of interest: Bioenergy
E-mail: monojb@tezu.ernet.in

Satadru Kashyap, MSc (Alberta, Canada)
Specialization/Areas of interest: Material Science, Mechanical Metallurgy, Characterization Techniques, Bioceramics
E-mail: satadru@tezu.ernet.in

Zahnupriya Kalita, MEngg (AIT, Thailand)
Specialization/Areas of interest: Mechatronics
E-mail: zk@tezu.ernet.in



SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF CULTURAL STUDIES

DEPT OF ENGLISH AND FOREIGN LANGUAGES

DEPT OF HINDI

DEPT OF MASS COMMUNICATION AND JOURNALISM

DEPT OF SOCIOLOGY



*School of Humanities and Social Sciences***DEPARTMENT OF CULTURAL STUDIES****THE DEPARTMENT**

The Department of Cultural Studies, Tezpur University, is one of the earliest Departments in the country to be fully devoted to the pursuit of Cultural Studies. Founded in 1995, the Department engages with cultural products, practices and forms with a special focus on North East India. Students and faculty in the Department engage in exciting interdisciplinary approaches to traditional fields of study where the aim is to explore emergent cultural and cross-cultural phenomena from multiple points of view. Researchers and faculties, drawn from various disciplines like Anthropology, Performance Studies, Literatures, Folklore, Media and Film Studies, Gender Studies are actively engaged in exploring subjects like cultural history, folklore and culture, local and national media, heritage, gender, cultural theory, comparative literature, translation and formation of nationalisms.

ACADEMIC PROGRAMMES

- MA in Cultural Studies
- PhD

STUDENT INTAKE

Programme	Student Intake
MA in Cultural Studies	46
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- Computer Laboratory
- Departmental Library
- Audio-Visual Class Room Cum Seminar Hall with Projector
- Departmental Museum
- Departmental Archive

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

The Department has been exploring the possibility of collaborative research work with distinguished national and foreign universities. The Department is currently engaged in working out a model for collaboration with the Department of Culture, Film, and Media of the University of Nottingham.

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
The Vaishnava Music of Assam in the Performative Context (Departmental SAP Project)	UGC	41 lakhs	5 years	P J Mahanta (Coordinator)
Philosophy in Performance: A Study of Bhakti Expressive Forms in Assam	ICRP	5 lakhs	3 years	P J Mahanta
Preparation –Preservation & Nutritional Aspects of Indigenous Food of some selected Ethnic groups of Assam	ICSSR	4.88 lakhs	3 years	J Gogoi Konwar (Mrs)

PUBLICATIONS**In International and National Journals**

- Baruah, Mandakini. 2012. Constructing female identity in consangual and affinal relationship: a study through select Assamese proverbs. *Labyrinth: International Journal of Post Modern Studies*, 3(4).
- Dutta, Parasmoni, and Minakshi Dutta. The Assamese films of Bhabendra Nath Saikia: another parallel stream of Indian cinema. *Journal of Creative Communications*, (accepted).
- Goswami, Madhurima. 2012. The Bodos: culture and society. *International Journal of Social Sciences*, 1(1).
- Goswami, Madhurima. 2012. Constructions of sacred space: the spatial dimensions of Kherai altar. *Journal of Research, Extension and Development*, 1(3).
- Goswami, Madhurima. 2012. Intangible dimensions of the Kherai ritual site. *Indian Journal of Applied Research*, 3(1).
- Goswami, Madhurima. 2013. Kherai of the Bodos: imagination of their world. *International Journal of Physical and Social Sciences*, 3(1).
- Hashik, N K 2013. Mappila muslims of Kerela - text in the life and life in the text: towards a complimentary model. *Performing Islam*, 1(2).
- Konwar, Juri Gogoi, and Kaushik Das. 2012. Creating ethnicity: a movement of Konch Rajbonshis of Assam. *International Journal of Humanities and Social Sciences*, 2(3).
- Nath, Debarshi Prasad, and Juri Dutta. 2012. Women and culture in India: countering the force of nativity. *South Asian Journal of Cultural Studies*, (On-line), 4(1).
- Nath, Debarshi Prasad, and Juri Dutta. 2012. Africa and India in the novels of Dai and Emecheta. *Comparative Literature and Culture*, 14(2).
- Nath, Debarshi Prasad. 2012. Inequality of languages and the question of choice in translation. *Translation Today*, 8(1), (accepted).
- Nath, Debarshi Prasad. 2012. Reading Annie Besant's *An Autobiography*: tracing the running threads. *International Journal of Current Research*, 4(10).
- Nath, Debarshi Prasad. 2012. The early fiction of Alice Munro. *Rupkatha*, 4(2).
- Nath, Debarshi Prasad. 2013. Indira Goswami's *Under the shadow of Kamakhya*. *Muse India*, 47.

Conference proceedings

- Das, J V. Social habits in the virtual world. In Proceedings of the 9th International Conference. International Congress of Social Philosophy 2012. Bangkok.
- Devi, S. Preventive conservation assessment in Kamrupa Anusandhan Samiti Collection, Guwahati, Assam. In Proceedings of the 45th National Conservation Conference-2013, IASC: New Delhi.
- Dutta, P. The other ecologies: why there is no eco museum in India. In Proceedings of the 1st International Conference on Eco museums, Community Museums and Living Communities. Green Line Institute for Sustainable Development-2012, Portugal.

Other publications

Book chapters

Dutta, K. 2012. Ethnic identity of Thengal Kacharis of Assam: Politics of exclusion and ethnic assertion and the role of folklore. In Nepal, P (ed). *Politics of Culture, Identity and Protest in North-East India*. Guwahati: Author Press.

Mahanta, P J. 2012. Aitihyabiksha aru Sankaradeva adhyana. In Nath, D. *Srimanta Sankaradeva*. Guwahati: Purbanchal Prakash.

Mahanta, P J. 2012. Indian drama: tradition and transition. In Saikia, G., and S J Neog. *Indian Drama: Tradition and Transition*. Jorhat: Bedakantha.

Mahanta, P J. 2013. Srimanta Sankaradeva kalabiksha: eti darshanik bichar. In Mahanta, Nirupama (ed). *Ankiya Bhaonar Aharyya*. Guwahati: Directorate of Cultural Affairs.

Mahanta, P J. 2013. The Sattria institution in Assam. In Kothari, S (ed). *Sattriya: Classical Dance of Assam*. Mumbai: Marg Foundation.

Books

Mahanta, P J., and Debarshi Prasad Nath (eds). *Cultural Studies: Perspectives from North East India*. Guwahati: Purbanchal Prakash, (in press)

Sarma, Parag Moni, and Neelakshi Goswami. 2013. *Gender in Folk Narratives: Theory and Practice*. New Delhi: DVS.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

J V Das presented a paper, The media reception in the periphery: a case study from Assam, in the International Conference, Media and the Emerging Market, organized by the institute of Asian Congress for Media and Communication, Chulalongkorn University, Bangkok, Thailand, 25-27 October, 2012.

M Barua participated in the workshop, UGC Capacity building Workshop for Women Managers in Higher Education (SAM), organised by the Chandraprabha Saikiani Centre for Women's Studies, Tezpur University, Tezpur, 3- 7 September, 2012.

M Goswami coordinated the workshop, UGC Workshop on Capacity Building of Women Managers in Higher Education (SAM), organized by the Chandraprabha Saikiani Centre for Women Studies, Tezpur University, Tezpur, 3- 7 September, 2012.

M Goswami participated in the workshop, Consultants' Meet on Violence on Women, organized by the North East Network in association with Omeo Kumar Das Institute for Social Change and Development, Guwahati, Guwahati, 11-12 August, 2012.

M Goswami participated in the workshop, Dialogue on Witch Hunting, organized by the NIIPCD, Guwahati, Guwahati, 4-6 October, 2012.

M Goswami participated in the workshop, Feminist Research Methodology Workshop, organized by the institute of Action Aid, Don Bosco Research Institute, Guwahati, Guwahati, 8-9 April, 2012.

- P Dutta presented a paper, The other ecologies: why there is no eco-museum in India, in the International Conference, Eco-museums, Community Museums and Living Communities, organized by the Institute of Sustainable Development, Barcelos, Portugal, 19-21 September, 2012.
- P Dutta presented a paper, Documenting oral histories of North East India: a preliminary note, in the national seminar, Recovering the Oral Histories of North East India, organized jointly by the Indian Institute of Advanced Study, Simla and INTACH, Nagaland Chapter in Dimapur, Dimapur, 31 October-01 November, 2012.
- S Devi presented a paper, Preventive conservation assessment in Kamrupa Anusandhan Samiti Collection, Guwahati, Assam, in the annual conference organized by the Indian Association for the Study of Conservation of Cultural Property, Salarjung Museum, Hyderabad, Hyderabad, 6-8 February, 2013.
- S Devi presented a paper, Textile dyeing in Assam: need of a holistic approach for preservation, in the seminar, Textile Archaeology and Conservation, organized by the University of Copenhagen, Denmark, India International Centre, New Delhi, New Delhi, 16-17 October, 2012.
- S Devi participated in the workshop, Workshop on Capturing Innovations for IPR Protection, organized by the IPR Cell, Tezpur University, Tezpur, 08 August, 2012.
- S. Devi participated in the workshop, Saksham, jointly organized by Microsoft India and the Department of Computer Science, Tezpur University, Tezpur, 18-27 April, 2013.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- National Seminar, Issues of Ethnic Identity and Ethnic Conflict in North East India, sponsored by ICSSR, 29-30 January, 2013.
- National Seminar, The Vaishnavite Music of Assam: Its Institutionalization and Performative Contexts, 20-21 March, 2013.
- Photographic Exhibition, Heritage of North East India, in collaboration with Archaeological Survey of India (ASI), Guwahati Circle, organized on the occasion of Heritage Day, 18-27 April, 2012.
- A series of lectures by Prof Mihir Ranjan Bhattacharyya, formerly Professor in Jadavpur University, Kolkata as Visiting Fellow under SAP-DRS-I, 25-29 September, 2012.
- A series of lectures by Dr Deepak Mishra, Associate Professor, Economics, JNU, Delhi as Visiting Fellow under SAP-DRS-I, 28 January, 2013.
- Interactive session with Prof Annette Gomis and Dr. M. Dolores Herrero, University of Zaragoza, Spain, 1 February, 2013.
- Interactive session with eminent film-maker Nadine Delpech, France, Helene Joinac, France and Prof. Ursula Hasenbusch, Toulouse University, France, 26 February, 2013.
- Interactive session with Prof Abdul Awwal Biswas, Professor and Head, Department of Anthropology, Shah Jalal University of Science and Technology, Bangladesh, 6 March, 2013.

- Interactive session with Lubna Marium, noted writer and performing artist from Bangladesh and the first recipient of Dr Bhupen Hazarika International Solidarity Award, 23 March, 2013.
- Interactive session with Prof C Mathew Snipp, Stanford University, USA, 23 March, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

- D P Nath acted as a resource person in the workshop, Workshop on Translation of Knowledge Texts into Assamese, organized by the National Translation Mission, Mysore, Nagaon, 27-29 December, 2012.
- P J Mahanta acted as a resource person in the workshop, Workshop on Translation studies, organized by Debraj Roy College, Golaghat, Golaghat, sponsored by UGC, 25 September, 2012.
- P J Mahanta delivered the Silver Jubilee Lecture, Heritage of Tezpur: A Historical Perspective, for the Silver Jubilee Celebrations of the Tezpur District Museum, Tezpur, 23 May, 2012.
- P J Mahanta delivered the Special Lecture, Bihu: Multiplicity in Voices, at a National Literary Meet, organized by the Sahitya Akademi, M S University, Baroda, Baroda, 24 August, 2012.
- P J Mahanta delivered the Special Lecture, Ideals of the Sankardeva Movements and their Abiding Relevance, in the national conference, Relevance of Vedic Texts in Modern Management, jointly organized by the Vedic Foundations of Indian Management (A Unit of ISOL Research Foundation) and the Department of Business Administration, Tezpur University, Tezpur, 17-18 November, 2012.
- P J Mahanta delivered the special Lecture, Old Assamese Prose Literature, at J.B. College, Jorhat, Jorhat, 7 March, 2013.
- P J Mahanta delivered the key-note address in the seminar-cum-workshop, Sattriya Dance, organized by the institute of North East Studies, Gauhati University, Gauhati University, 4 November, 2012.
- P J Mahanta delivered the Sarat Chandra Sarma Memorial Lecture, Sankardeva: Indological Perspectives, organized by the Sarat Chandra Sarma Centre on Indological Studies, Guwahati, Guwahati, 13 February, 2013.
- P J Mahanta delivered the valedictory address in the workshop, Workshop on Translation of Knowledge Texts into Assamese, organized by the National Translation Mission, Mysore, Nagaon, 29 December, 2012.
- S K Dutta acted as a resource person in the workshop, Workshop on Translation of Knowledge Texts into Assamese, organized by the National Translation Mission, Mysore, Nagaon, 27-29 December, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

- Prof Abdul Awwal Biswas, Professor and Head, Department of Anthropology, Shah Jalal University of Science and Technology, Bangladesh
- Prof Annette Gomis, University of Zaragoza, Spain
- Prof C Mathew Snipp, Stanford University, USA
- Dr Deepak Mishra, Centre for the Study of Regional Development, JNU, Delhi
- Helene Joinac, Eminent film-maker from France
- Lubna Marium, noted writer and performing artist from Bangladesh and the first recipient of Dr Bhupen Hazarika International Solidarity Award, 2013
- Dr M Dolores Herrero, University of Zaragoza, Spain
- Prof Mihir Ranjan Bhattacharyya, formerly Professor in Jadavpur University, Kolkata
- Nadin Delpech, Eminent film-maker from France
- Prof Ursula Hasenbusch, Toulouse University, France

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

- Madhurima Goswami, Assistant Professor was awarded PhD by Tezpur University on her thesis entitled *Kherai Ritual of the Bodos : A Ritual in Transition*, April, 2012.

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- NET: 4
- JRF – 3
- SLET: 1

THE FACULTY OF THE DEPARTMENT**Professors**

P J Mahanta, MA (Gauhati), PhD (Gauhati)

Specialization/Areas of interest: Assamese Literature and Culture, Traditional Performances of Assam

E-mail: pjm@tezu.ernet.in

S K Dutta, MA (Gauhati), PhD (Visva Bharati)

Specialization/Areas of interest: Folkloristics, Assamese Culture, Language, and Literature

E-mail: skd@tezu.ernet.in

Associate Professor

D P Nath, MA (Tezpur), PhD (Arunachal University)

Head of the Department

Specialization/Areas of interest: Gender Studies, Comparative Literature, Cultural Theory, Translation

E-mail: dpnath@tezu.ernet.in

Assistant Professors

M Goswami (Mrs), MA (Delhi), PhD (Tezpur)

Specialization/Areas of interest: Sanskrit Poetics, Performing Arts

E-mail: mgs@tezu.ernet.in

P Dutta, MA (Tezpur), PhD (Tezpur)

Specialization/Areas of interest: Heritage Studies

E-mail: paras@tezu.ernet.in

J Gogoi Konwar, MA (Dibrugarh), PhD (Dibrugarh)

Specialization/Areas of interest: Medical Anthropology, Anthropology of Food and Culture

E-mail: jgkon@tezu.ernet.in

J V Das, MA (Tezpur)

Specialization/Areas of interest: Cultural Communication, Development Communication, Epistemology of Communication Studies

E-mail: jvdas@tezu.ernet.in

M Baruah, MA (Tezpur), PhD (Tezpur)

Specialization/Areas of interest: Gender Studies, Folklore

E-mail: mb@tezu.ernet.in

Hashik, N K., MA (Calicut), PhD (Hyderabad)

Specialization/Areas of interests: Performance Studies, Community Studies, Research Methodology

E-Mail: hashikk@tezu.ernet.in

*School of Humanities and Social Sciences***DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES****THE DEPARTMENT**

The Department, which was established in 1994, aims to give instruction and carry out research in English Literature, Women's Writing in English, American Literature, Indian Writing in English, English Language Teaching, and Linguistics.

ACADEMIC PROGRAMMES

- MA in English
- MA in Linguistics and Language Technology
- Integrated MA in English/Integrated BA BEd
- One-Year Certificate Course in Chinese
- PhD

STUDENT INTAKE

Programme	Student Intake
MA in English	100
MA in Linguistics and Language Technology	20
Integrated MA in English/Integrated BA BEd	20
Certificate Course in Chinese	39
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

The Department has a digital multimedia multi-purpose language laboratory with fifteen booths. Students can improve on their language skills, especially the skills of listening and speaking, in English, Chinese, and French by utilizing the software and other facilities available in the laboratory. The Department also has a computer laboratory for the use of the students and the research scholars.

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

The Department is at present carrying out its major research work in the following areas:

- Travel writing and Migration narratives
- Life writing
- Translation Studies
- English Language Teaching
- Morphology and Syntax (of some of the indigenous languages of Assam and Arunachal Pradesh)
- American Literature
- African Literature
- Caribbean Literature
- Indian Writing
- Book History
- Critical Theory

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
SAP- DRS	UGC	32,00,000.00	5 years	B K Danta Coordinator
Indian Languages Corpora Initiative (Phase-2)	Department of Electronics and Information Technology (DEITY)	27,03,000.00	2½ Years	Madhumita Barbora
Digital Language Preservation	Department of Electronics and Information Technology (DEITY)	39,14,000.00	3 Years	Madhumita Barbora (PI) G K Borah (Co PI)
Language Contact and Convergence study of Bugun (Khowa) in West Kameng District of Arunachal Pradesh)	Indian Council of Social Science and Research (ICSSR)	5,21,375.00	2 Years	Madhumita Barbora

PUBLICATIONS**In International Journals**

Nath, Arup Kumar. 2012. Sound change in Deori: A descriptive account. *Journal of Universal Language*, 13(2).

Sahoo, Sanjib. 2012. Violence in English literature from North-East India. *Lalit Kala Contemporary*, 53(21-24).

In National Journals

Biswas, Sravani. 2012. Kitchen politics and female space. *Interdisciplinary Journal of Literature and Language*, 1(1).

Biswas, Sravani. 2012. Anxiety and angst: the dilemma of the Mizo. *Marginalised Identity: An Engagement with Art, Literature, Language and Ethnicity*, Vol no(issue no).

Nath, Arup Kumar. 2012. Khudra bhasabor xosakoi-e jiyai thakibone? ('Will the smaller languages survive?'). *Prakax*, 7(issue no).

Books

Borah, Gautam K., and M M Sarma. Grandma's Tales (English translation of Laxminath Bezbarua's *Burhi āir xādhū*). Guwahati: Katha Publishers, (in press).

Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).

Nath, Arup Kumar. Code Switching- Mixing Induced Changes in Modern Assamese and their Future Implications. Guwahati: Asom Prakashan Parishad, (in press).

Sarma, M. Madan and Sanjib Sahoo. Translation of Purnakanta Burhagohain's *Patkair Xipare Na-Basar* (Nine Years beyond the Patkai). Name of the place: name of the publisher, (in press)

Sarma, Madan M., and Gautam K Borah. *Languages of Assam*. Assam Akademi, (in press).

Book Chapters

Barbora, Madhumita, and D Nath. The Agentive Ergativity in Assamese. In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).

Barbora, Madhumita. Causative Constructions in Assamese. In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).

- Barbora, Madhumita. The Particle *zei*: a Clitic, a *Wh*-Operator or a Complementizer? In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).
- Borah, Gautam K. The Fuzzy Boundary between Projected and Potential Realities and *iba*. In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).
- Borah, Gautam K. The Indeterminacy of Bare Nouns in Assamese and their Determination. In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).
- Borah, Gautam K. The Ingresssive Progressive in Assamese. In Borah, Gautam K., and Madhumita Barbora (eds). *Aspects of Modern Assamese*, (forthcoming).
- Mohapatra, D. 2012. Globalization, language and North East. In Basar, J., M C Behera and Lisa Lomdak (eds). *Marginalised Identity; An Engagement with Art, Literature, Language and Ethnicity*. New Delhi: Commonwealth Publishers Ltd.
- Nath, Arup Kumar. 2012. Evidences of Sound Changes in Tiwa: A Synchronic Study. In Awadesh K Mishra, Melissa G. Wallang and Ch. Sarajubala Devi (eds). *Studies in Linguistics of the North Eastern Languages*. New Delhi: Lakshi Publishers and Distributors.
- Nath, Arup Kumar. 2012. Tiwa: An Overview. In Prof. M.M. Sarma and Dr. Gautam K Bora (eds). *Languages of Assam: An Introduction*. Guwahati: Assam Academy for Cultural Relations.
- Nath, Arup Kumar. 2012. A Chapter on the Tiwa Language. In *Peoples' Linguistic Survey of India* (Assam Volume). Baroda: Bhasha Research and Publication Centre.
- Sahoo, Sanjib. Problematic Representations Of Decolonization: Reading Mahasweta Devi's Short Fiction. In *Reader on Indian Fiction in English Translation*. Tura: NEHU.
- Sarma M M. 2012. Appropriation or Indigenization? Shakespeare in Assamese. In Biswas, T., A Roy and S Dhar (eds). *Theatre International: East-West Perspectives on Theatre*, Volume V: Essays on the Theory and Praxix of World Drama, Kolkata: Avantgarde Press and Shakespeare Society of Eastern India.
- Sarma M M. 2012. Lakshminath Bezbaroar Chutigalpa. In Bora A., (ed). *Asamiya Chutigalpa: Oitihya aru Bibartan* (Assamese Short Story: Tradition and Evolution). Jorhat: Jorhat Central College.

Conference Proceedings

- Borah, G K. The fuzzy boundary between projected and potential realities and i:b. In Proceedings of the AICL-34, NEHU, November 2012.
- Mohapatra, D. The role of English for socio-economic development of the children of the marginalised seasonally migrant labour community. In Proceedings of English Language Teacher Education in a Diverse Environment. British Council: New Delhi, March, 2013.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- Bijay K. Danta presented the paper (plenary lecture), The institution and institutionalization of English in India, at the international conference, Contemporary English Studies: Society, Culture and Language, organized by the Department of English and Forum for English Studies, Assam University, Silchar, 6-8 March 2013.
- D Mohapatra attended the AINET International Conference & 5th National & 9th Vidarbha ELTAI Conference held in Nagpur, 18-19 January 2013.
- D Mohapatra attended the 43th Annual ELTAI Conference, Chennai, 19-21 July, 2012.
- D Mohapatra attended and the International Teacher Educators Conference in Hyderabad (organised by British Council and EFL University, Hyderabad), 16-18 March 2013.

Gautam K Borah presented a paper, Some Verbs Are More Verby Than Others: The case of be and other copulas, at ICEG-9, School of Social Sciences and Languages, VIT University, Vellore, 3-5 January 2013.

Gautam K Borah presented a paper (jointly produced with R F Akhtar), Nominalization in Karbi: Some Observations, at the 18th Himalayan Languages Symposium, Banaras Hindu University, Varanasi, 10-12 September 2012.

Gautam K Borah presented a paper, The Fuzzy Boundary Between Projected and Potential Realities and *i:b*, at AICL-34, NEHU, Shillong, 1-3 November 2012.

National Conference/Refresher Course/Workshop

Bashabi Gogoi attended a workshop, Workshop on Diaspora Studies, organised by UGC SAP- DRS, Dept of English and Foreign Languages, Tezpur University, Tezpur, Tezpur, 4 February, 2013.

Bashabi Gogoi presented a paper, Exploration and Consolidation of Colonial Power- A Reading of Major John Butler's *Travels and Adventures in the Province of Assam*, at the national conference, The Form and Function of Travel Writing in North-East India: Interdisciplinary Concerns, organised by UGC SAP-DRS, Dept of English and Foreign Languages, Tezpur University, Tezpur, Tezpur, 30 March, 2013.

Bijay K Danta delivered two lectures, Beginning right: The 'how' and 'where' of research in literature, and The 'what' and 'why' of research in literature, at UGC Refresher Course, Research Methodology organized by Academic Staff College, Gauhati University, 23-24 January, 2013.

Bijay K Danta delivered two lectures, The sociology of literature, and The sociology of sexuality, in National Level Training-cum-Workshop, Research Methodology in the Social Sciences, organized by ICSSR, New Delhi, and the Department of Sociology, Tezpur University, Tezpur, Tezpur, 14-15 March, 2013.

Bipasha Patgiri and Charlie Redmon presented a paper, Spectral quality as a measure of prominence in Assamese, in the national seminar, 34th All India Conference of Linguistics, organized by NEHU, Shillong, Shillong, 1-3 November, 2012.

Bipasha Patgiri attended the workshop, Introduction to Computational Phonetics, Phonology and Prosody, organized by Tezpur University, Tezpur, Tezpur, 23-29 December, 2012.

Bipasha Patgiri presented the paper, Some segmental issues of Nalbaria Assamese, in the national seminar, 34th All India Conference of Linguistics, organized by NEHU, Shillong, Shillong, 1-3 November, 2012.

D Mohaptra attended a Week-long Professional Development Programme, Science Communication through Mass Media, organised by the Department of Mass Communication and Journalism, Tezpur University, Tezpur, Tezpur, 10-15 December, 2012.

Esther Daimari attended the workshop, Re-structuring Undergraduate Curriculum, organized by Handique Girls' College, Guwahati, Guwahati, 27-28 April, 2012.

M M Sarma presented a paper, Changing rural scenario and literary representation in Assam, in the national Seminar, Representation of the Rural in Modern Indian Literature, organized by Nagaon GNDG Commerce College, Nagaon, Nagaon, 25-26 September, 2012.

M M Sarma presented a paper, Colonial Prejudice and Pretension: A Reading of *Adventures of Jean-Baptiste Chevalier in Eastern India (1752-1765)* in the SAP-DRS conference, The Form and Function of Travel Writing in Northeast India: Interdisciplinary Concerns, organized by the Department of English and Foreign Languages, Tezpur University, Tezpur, Tezpur, 30 March, 2013 .

M M Sarma presented the paper, Translation Scenario in Assam and Translation of Short Stories in the national workshop, Translation of Short Stories from English to Assamese, organized by the Dept. of English, Debraj Roy College, Golaghat, Golaghat, 15-17 September 2012.

Sanjib Sahoo presented a paper, Domestic Servants as the Other: Popular Television Family Dramas In Hindi And Nation Building, in the national seminar, Media in National Building: A Retrospective, organized by the Dept. of Mass Communication and Journalism, Tezpur University, Tezpur, Tezpur, 30-31 January, 2013.

Sanjib Sahoo presented a paper, Making News, Making People: Representations of Ethnic People of North-East India in Newspapers of Assam, in the national seminar, Issues of Ethnic Identity and Ethnic Conflict in North East India, organized by the Dept. of Cultural Studies, Tezpur University, Tezpur, Tezpur, 29-30 January, 2013.

SEMINARS/WORKSHOPS/SYMPOSIA/EXTENSION PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Workshop, *Diaspora and Literature: Interdisciplinary Concerns* (under the SAP-DRS Programme), 4 February 2013.
- National Conference, *The Form and Function of Travel Writing in North East India: Interdisciplinary Concerns* (under the SAP-DRS Programme), 30 March, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

Gautam K Borah delivered the Key Note Address, *Against Reductionism*, at a UGC-sponsored national seminar, Teaching English as a Second Language at the College Level in India: Issues And Prospects, Nalbari Commerce College, 26-27 September, 2012.

Bipasha Patgiri delivered a talk, Morphophonology, in the workshop, Introduction to Computational Phonetics, Phonology and Prosody, organized by Tezpur University, Tezpur, Tezpur, 23-29 December, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof Annette Gomis, University of Zaragoza, Spain

Prof Dolores Herrero, University of Zaragoza, Spain

Prof E Raja Rao, Dept of English, Berhampur University

Prof P Madhavan, English & Foreign Languages University, Hyderabad

Prof Sachidananda Mohanty, Department of English, University of Hyderabad

Prof Shyamal Das, Department of English, Tripura University

Prof Subir Dhar, Professor of English & Director, School of Languages and Culture, Rabindra Bharati University, Kolkata

Prof Sumanyu Satapathy, University of Delhi, New Delhi

NUMBER OF STUDENTS WHO PASSED NET/JRF/SLET

- NET: 15
- SLET: 4

THE FACULTY OF THE DEPARTMENT**Professors**

Madan M Sarma, MA (Gauhati) PGDTE (CIEFL, Hyderabad) PhD (Dibrugarh)
Specialization/*Areas of interest*: Literature in English, Critical Theory, Fiction, ELT (Syllabus Design and Materials Production) and Linguistics
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Bijay K Danta, MA (Sambalpur), MPhil (Berhampur), PhD (Utkal)
Specialization/*Areas of interest*: American Literature, Critical Theory, Translation and Translation Politics
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Farheena Danta, MA (Dibrugarh) PhD (Dibrugarh)
Specialization/*Areas of interest*: American Literature, Modernist Poetics, Cultural Studies
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P K Das, MA (Delhi), PhD (Gauhati)
Specialization/*Areas of interest*: Indian Writing in English, American Literature
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Madhumita Barbora, MA (Gauhati), MPhil (CIEFL, Hyderabad), PhD (Tezpur)
Specialization/*Areas of interest*: Linguistics (Morphology, Syntax, Language Acquisition)
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Associate Professors

Gautam K Borah, MA (Leeds, England), PhD (NTNU, Norway)
Specialization/*Areas of interest*: Philosophy of Language, General and Cognitive Linguistics, English Literature, Applied Linguistics
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Sravani Biswas, MA (Visva Bharati), PhD (NEHU)
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Assistant Professors

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Specialization/*Areas of interest*: Curriculum Development, Materials Production, Language Policy
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Hemjyoti Medhi, MA (Delhi), MPhil (Delhi)
Specialization/*Areas of interest*: Gender Studies, Women's Studies
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Rathijit Chakraborty, MA (Chinese) (JNU), MPhil (Chinese) (JNU, New Delhi)
Specialization/*Areas of interest*: Chinese Language & Literature
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Reetamoni Narzari, MA (NEHU)
Specialization/*Areas of interest*: Women's Writing, Commonwealth Literature, Indian Writing in English
E-mail: reita@tezu.ernet.in

Souvick Mondal, MA (Chinese), (Visva Varati)
Specialization/*Areas of interest*: Chinese Language & Literature
E-mail: souvick@tezu.ernet.in

Pallavi Jha, MA (Hyderabad), MPhil (Hyderabad)

Specialization/*Areas of interest*: Children's Literature, Popular Culture and Literature, Postcolonial Writing

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Sanjib Sahoo, MA (Pune), PhD (Tezpur)

Specialization/*Areas of interest*: Indian Writing in English, Ecocriticism, Travel Writing

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Bashabi Gogoi, MA (Tezpur), MPhil (EFLU, Shillong)

Specialization/*Areas of interest*: Indian Writing in English, Critical Theory

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Arup Kumar Nath, MA (JNU), PhD (JNU)

Specialization/*Areas of interest*: Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics

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Bipasha Patgiri, MA (Delhi), MPhil (JNU)

Specialization/*Areas of interest*: Phonology (Prosody, Dialectology, Language Typology and Syntax)

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Esther Daimari, MA (Gauhati), MPhil (Gauhati)

Specialization/*Areas of interest*: South Asian Literature

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Pramod Kumar, MA (JNU), MPhil (JNU), PhD (JNU)

Specialization/*Areas of interest*: Language Description & Documentation, Endangered Languages & Lesser known Languages, Language Typology, General Linguistics

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*School of Humanities and Social Sciences***DEPARTMENT OF HINDI****THE DEPARTMENT**

The Department of Hindi was established in January 2010. At present the Department offers a Post Graduate Diploma Programme in Translation (Hindi), an Inter Disciplinary Course (IDC) in Hindi, and Hindi as a Modern Indian Language (MIL) to students on integrated BA. The Department also offers a PhD programme (in Hindi literature/language). Furthermore, the Department offers a Certificate Course in Official Hindi (Level-1) to the employees of the University in order to help them develop their skill and self-confidence in speaking and writing in the language. The Department is starting M.A. programme from Autumn Semester 2013.

ACADEMIC PROGRAMMES

- MA
- PhD
- Post Graduate Diploma in Translation (Hindi)
- Certificate Course in Official Hindi
- Inter-Disciplinary Course (Hindi)
- Modern Indian Language for Integrated BA

STUDENT INTAKE

Programmes	Student Intake
MA	25
PhD	Intake variable 6 registered during this period
PGDT	23
Certificate Course	10
IDC	Intake variable
MIL	Intake variable

PUBLICATIONS**In International and National Journals**

- Anushabda. 2013. Jankavi Nagarjun's 'Janta Ke Hriday Jiya'. *Samanway Poorvottar*, Jan-March Issue.
- Anushabda. 2012. 'Pratibadh Patrakarita Ke Pratiman: Akhabari Cartoon'. *Sahriday*, Oct-Dec Issue.
- Anushabda. 2013. Ajneya aur Muktibodh ke kavya mein adhunikta ki prakriti, *Samanway Poorvottar*, July-Dec Issue.
- Tripathi, S K. 2012. 'Bahti Ganga: Adhyan Ke Kuch Bindu'. *Sahitya Vartika*, June Issue.
- Tripathi, S K. 2012. 'Janpad Mirzapur Ke Aadivasi Aur Karma'. *Sahitya Vimarsh*, December Issue.
- Tripathi, S K. 2012. 'Keral Ke Hindi Sahityakar'. *Ananya*. June Issue.
- Tripathi, S K. 'Schooli Shiksha Mein Pahli, Dusri Aur Tisri Bhasha Ke Rup Mein Hindi Shiksan'. *Sahitya Vimarsh*, December Issue.
- Tripathi, S K. Bahti Ganga: Adhyan Ke Kuch Bindu'. *Samvad*, October Issue.

Other publications**Book chapters**

Nath, A K. 2012. Arunachal Pradesh Mein Hindi Dasha Aur Disha. In Reddy, B S. *Samsamayik Hindi Sahitya: Vividh Ayam* (Dr Malatlal Patel Abhinandan Granth). Gujrat: Shanti Prakash.

Tripathi, S K. Kerala Mein Hindi Prachar-Prashar Ka Aitihasik Sandarbha. In Reddy, B S. *Samsamayik Hindi Sahitya: Vividh Ayam* (Dr Malatlal Patel Abhinandan Granth). Gujrat: Shanti Prakash.

Tripathi, S K. 2012. 'Bahti Ganga: Adhyan Ke Kuch Bindu', In Pandey, Amit Kr. *Hindi Upanyash: Ek Antaryatra*. New Delhi: Rajkamal Prakashan.

Tripathi, S K. Bhasha Ki Bharatiya Awdharana, In Pandey, Amit Kr. *Hindi Upanyash: Ek Antaryatra*. New Delhi: Rajkamal Prakashan.

Tripathi, S K. 'Dakhini Hindi to Hindi Ki Bahumoolya Kadi Hai', In Pandey, Amit Kr. *Hindi Upanyash: Ek Antaryatra*. New Delhi: Rajkamal Prakashan.

Books

Tripathi, S K. 2012. *Bhojpuri Lokgit: Shailivaigyanik Sandarbha*. New Delhi: Priya Sahitya Sadan.

Anushabda. 2012. *Hindi: Ek Moulik Vyakaran* (Translation). New Delhi: Vani Prakashan.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

A K Nath attended a national seminar sponsored by Central Hindi Directorate and organized by Assam Rashtrabhasha Prachar Samiti on the topic Poorvottar Bharat Mein Hindi Ki Vartaman Sthiti as Special Guest and delivered a lecture, Arunachal Pradesh Mein Hindi, Chunoutiyan Evam Samadhan, 17 March, 2013.

A K Nath attended a seminar organized by Kendriya Hindi Sansthan, Guwahati & Shabda Bharati and delivered the Key Note address, Guwahati, 23-24 March, 2013.

A K Nath attended a UGC sponsored national seminar, Role of Women in Management and Governance in Higher Education, organized by the Women Cell of Madhabdev College, Narayanpur as Special Guest and delivered a lecture, Madhabdev College, Narayanpur, 29 April 2012.

A K Nath attended as a member the Expert Committee for the Evaluation of Proposals from College Teachers for Undertaking Minor Research Project and Proposals from Colleges for Organizing Seminars, Conferences, and Workshops, UGC Eastern Regional Office, Kolkata, 28 December 2012.

Anju Lata attended a national seminar, Taboos, Myths and Legends, at Japhu Christian College, Nagaland, 30-31 August 2012.

Anju Lata presented a paper, Bhupen Hazarika Ke Geeton Mein Samajik Chetna, at a national seminar organized by Gauhati University & NEINAD, Gauhati University, 17-18 November 2012.

Anushabda presented a paper, Bhakti Andolan Ka Sanskritik Mahatwa, organized by Kendriya Hindi Sansthan, Guwahati and Shabda Bharati, Guwahati, 23-24 March, 2013.

Anushabda presented a paper, Jalvayu Parivartan Aur Jeevan Par Uska Prabhav, at a seminar, organized by DRDO, Tezpur, 30 October 2012.

Anushabda presented a paper, Krantidharmi Kavi Bhupen Hazarika Aur Baba Nagarjun, at a national seminar organized by Gauhati University & NEINAD, Gauhati University, 17-18 November 2012.

INVITED TALKS BY THE FACULTY IN INDIA AND ABROAD

A K Nath delivered an invited talk, Kahani Sikshan, for Kendriya Hindi Sansthan, Guwahati, Misamari, 18 January 2013.

A K Nath delivered an invited talk, Karyalayee Hindi Ki Avashyakta, for the Hindi Cell of Tezpur University, Tezpur University, 25 March, 2013.

Anju Lata delivered an invited talk, Hindi Bhasha Ki Sambaidhanik Sthiti, for the Hindi Cell of Tezpur University, Tezpur University, 25 March, 2013.

Anushabda, delivered an invited talk, Bhasha Shikshan, for the Kendriya Hindi Sansthan, Guwahati, Misamari, 19 January 2013.

Anushabda, delivered an invited talk, Lekhan Mein Aanewali Samasyayein Wa Samadhan, for the Hindi Cell, Tezpur University, Tezpur University, 25 March, 2013.

S K Tripathi delivered an invited talk, Sampark Bhasha Hindi Aur Samachar Patra, at DBHP Sabha, Kerala, Ernakulam, 10 January 2013.

THE FACULTY OF THE DEPARTMENT

Professors

A K Nath, MA (Gauhati), PhD (Manipur)

Specialization/Areas of Interest: Medieval Poetry, Folkloristic, Comparative Literature

E-mail: ananta@tezu.ernet.in

Associate Professors

S K Tripathi, MA (Linguistics, SSVV, Varanasi) MA (Hindi, P V Jaunpur), MPhil (Lucknow), PhD (BHU)

Head of the Department

Specialization/Areas of Interest: Applied Linguistics, Indian Poetics, Folkloristics

E-mail: sktripathi@tezu.ernet.in

Assistant Professor

Ms A Lata, MA (JNU), MPhil (JNU)

Specialization/Areas of Interest: Medieval Poetry, Fiction

E-mail: anju@tezu.ernet.in

Anushabda, MA (Delhi), MPhil (Delhi), PhD (Delhi)

Specialization/Areas of Interest: Linguistics, Media, Poetry, Indian and Western Poetics.

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School of Humanities & Social Sciences

DEPARTMENT OF MASS COMMUNICATION & JOURNALISM

THE DEPARTMENT

The Department, which was started in 2001, is currently offering courses in Television Journalism and Production; Visual Communication; New Media Technology; Film Studies; Advertising and Public Relations; Development Communication; Media Management; Media Law and Ethics; Communication Research Methods and Applications. Students can specialize in their own chosen areas of communication and journalism: Print Media/Advertising and Public Relations. They choose for specialization between Print Journalism/Advertising and Public Relations in the second semester; in the third semester they chose one from the electives - Radio, Television and New Media. In order that students can gain first-hand experience the Department organizes two 4-week internship training programs every year in collaboration with various media organizations. In the interests of the North-East the Department is, in its teaching as well as research, concentrating at the moment primarily on development communication. The Department also publishes a monthly laboratory journal called *News Café*.

Since August 2010 the department has also been running a one-year (2 semesters) PG Diploma Programme in Mobile and Multimedia Communication (PGDMMC) under the Innovative Programme Scheme of UGC. The syllabus of the programme has been designed taking into consideration the special demands of the media market in the region. The Department also offers a PhD programme.

ACADEMIC PROGRAMMES

- MA in Mass Communication and Journalism
- PG Diploma in Mobile Multimedia Communication (PGDMMC)
- PhD

STUDENT INTAKE

Programme	Student Intake
MA MCJ	35
PGDMMC	15
Ph D	Intake varies

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- The Department is fully equipped with all modern equipment, viz, Audio-Video Studio, Non Linear Edit Suit, Audio Studio, Print Lab, New and so on. The Department is also going to have a full fledged Community Radio Station in the near future.
- The Department is using different types of video cameras: Pansaonic P2 HD and Sony DSR 570 for multi camera production (indoor and outdoor). The Studio is equipped with Video Mixer, Audio Mixer, Studio Tripod, Talk Back System, Recorders, Microphones, Light Systems, etc.
- For video editing the Department is using all Mac Based systems with Final Cut Pro/Studio.
- The Audio edit suit is configured with Digi Design ProTools and Sound Forge.
- The Print Lab and the New Media Lab have latest Windows computers and iMac systems with all kinds of software required for page designing, web page making and so on. The Department has several colour and B/W laser printers in the lab for the use of the students.

- For photography the Department has different types of SLR cameras in digital and analog systems.
- For screening and conferences the Department has a fully air-conditioned hall with complete audio-video facilities.
- All the classrooms are fitted with multimedia projection systems with an uninterrupted power supply.

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
Media Exposure of Corruption in Andhra Pradesh during 1999-2008: A Tracer Study of Uses and Gratification Theory	ICSSR	6,04,000.00	2 years	C S H N Murthy
Effects of Mobile Phone Uses in Households-A Case Study in the Sonitpur District of Assam	UGC	1.01,000.00	1.5 years	Kapou Malakar
Participatory Media: Learning to Listen to the Unheard Voices	UNICEF (Assam)	5,31,000.00	3 months	Joya Chakraborty

PUBLICATIONS

International journals

- Bora, A. 2012. Journalism in the 21st century world – tackling challenges. *Mediterranean Journal of Social Sciences*, 3(1).
- Bora, A. 2012. Media psychology: the need of the hour. *US-China Education Review B*, 2(10).
- Bora, A., and L Bala. 2012. Community radio movement in India – few aspects requiring attention. *Mediterranean Journal of Social Sciences*, 3(1).
- Bora, A., and P J Daimari. 2012. Sports films for social message communication. *New Media and Mass Communication*, 6(5-8).
- Lakhendra, B. 2012. Community Radio Movement in India – a few aspects requiring attention. *Mediterranean Journal of Social Sciences*, 3(1).
- Murthy C S H N. 2013. Remakes in Indian cinema: Telugu cinema as a cross-cultural connect between North-South in Indian film-making. *Journal of International Communication*, 2013(2).
- Murthy, C S H N., O B Meitei, and R Das. 2012. Wiki-Leaks- an engima of information sensation sans accountability: a case study of India. *New Media and Mass Communication*, 2012(2).
- Murthy, C S H N. 2012. High Film Centricity in Indian TV Channels. Perspectives and challenges. *Journal of Creative Communication*, 5(3).
- Murthy, C S H N. 2012. State owned media and democratization in Eritrea: an analytical study. *Global Media Journal* (African Edition), 6(2).

National journals

- Bora, A. 2012. Educational institutions and government: potential preservers of our cultural heritage. *University News*, 50(9).
- Bora, A. 2013. Preserving India's folk and tribal literature: an overview. *University News*, 51(5).
- Bora, A. 2012. Professional education: Overcoming major challenges. *University News*, 49(52).
- Bora, A. 2012. Higher education – consolidation of existing facilities. *Academe* (Journal of UGC-Academic Staff College, Himachal Pradesh University), XV(1).
- Bora, A. 2012. Public service broadcasting by radio: challenges ahead. *Science Communicator*, 3(2).
- Murthy C S H N., and O B Meitei. 2013. Indian cinema: a rather lack-luster centenary year. *VIDURA*, 2013 (1).

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**International and National**

A Bora presented a paper, The role of media in nation building, in the ICSSR sponsored national seminar, Media in Nation Building, Tezpur University, 30-31 January 2013.

A Bora presented a paper, The role of media in science communication, in the two-week long workshop, Science Communication, sponsored by the Department of Science and Technology, Government of India, Tezpur University, 1-6 October and 3-9 December 2012.

Murthy C S H N presented a paper, Film remakes as cross-cultural connections between north and south: a case study of the Telugu film industry's contribution to Indian Filmmaking, at the 21st AMIC Conference held at the Faculty of Communication and Media Studies of Universiti Teknologi MARA (UiTM), Shah Alam, Malaysia, July 11-14, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Samudra Guptoo, Senior Correspondent, The Indian Express, North-East Region, Guwahati

Vasuki Belavadi, Reader (Television Production), UoH

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- NET: 5
- JRF: 5

THE FACULTY OF THE DEPARTMENT**Professor**

C S H N Murthy, PhD (Andhra)

Head of the Department

Specialization/Areas of interest: Research in Communication and Media Studies (Mediatization), Print, Film, & Electronic, Development Communication, Political & International Communication, Intercultural Communication/ Cultural Studies. E-E-
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Associate Professors

P Anbarasan, MPhil (JNU), PhD (JNU)

Specialization/Areas of interest: Media and Cultural and Subaltern Studies

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A Bora, PhD (Gauhati)

Head of the Department

Specialization/Areas of interest: Radio, Development Communication, Print media,
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Assistant Professors

J Chakraborty (Mrs), MMC (Assam University), PhD (UoH)

Specialization/Areas of interest: ICT4D, Development Communication, Women and Media; Traditional Media.

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U K Pegu, MMC (Assam University)

Specialization/Areas of interest: Information and Communication Technology, Communication Research, Interactive Advertising, Film Studies, Gender Studies, New Media, Media and Textual Analyses, Human Rights Issues

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Kh Kabi, MA (Madras), Ph.D (Assam University)

Specialization/Areas of interest: International Communication, Political and Cultural Communication

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A Nagaraj, MA Communication, (Hyderabad)

Specialization/Areas of interest: Electronic Media Production, Documentary Filmmaking, Television Production and Advertising

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Perosh Jimmy Daimari, MCJ (Tezpur)

Specialization/Areas of interest: Film Studies, Development Communication

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Ms K Malakar, MA (AJK), MCRC (Jamia Milia Islamia)

Specialization/Areas of interest: New Media for development, Media management, Film studies, Media studies,

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B Lakhendra, MMC (BHU)

Specialization/Areas of interest: Radio, Television & Film, Youth & Rural Development, Traditional Media, Public Relation & Development Communication, Environment (Coastal Environment)

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*School of Humanities and Social Sciences***DEPARTMENT OF SOCIOLOGY****THE DEPARTMENT**

The Department of Sociology at Tezpur University was established in 2006 with a Master's programme. Subsequently, it launched a PhD programme in 2008. The department is dedicated toward creating competent and socially sensitive graduates through rigorous teaching/training programmes and extension activities. The curriculum lays emphasis on the teaching and learning of general concerns of sociology as well as the issues of sociological significance in northeastern India which constitute a special focus of the teaching and research of the department. A combination of participatory, experiential and creative pedagogy is used for transacting the curricula with a view to fostering dialogue, mutual learning and critical reflection. The pedagogical practices also utilise an inter-disciplinary framework combining classical approaches in conjunction with emerging areas of research. The students pursuing their Masters in the department not only have to learn critical approaches and perspectives in the classroom but are also encouraged to participate in short field visits during vacations as part of their mandatory research projects. The department also takes care to expose the students to the prevailing social realities through activities such as outreach programmes, regular film screening, seminars and other programmes in collaboration with other social organisations.

ACADEMIC PROGRAMMES

- MA in Sociology
- PhD in Sociology

STUDENT INTAKE

Programme	Student Intake
MA	30+5*
PhD	Intake variable

*Under Self Support Scheme

RESEARCH PROJECTS: ONGOING AND NEW

SI No	Name of the Project	Funding Agency	Amount in INR	Duration	Principal Investigator
1	Land Identity and Development in Nagaland	Ministry of Food Processing Industries, New Delhi	15 lakhs	3 years	Kedilezo Kikhi
2	Sociological Study of the Panchayat Elections and Local Level Politics: A Micro-Level Study in North-east India	DST	0.59 lakhs	1 year	A K Das
3	Primary Health Care System and Inclusive Development in North East India: A Situation Analysis of Primary Health Centres in Assam	UGC	9.29 lakhs	2 yaers	Sumesh S S
4	A Micro Study of Media of Instruction and Languages Taught in the Schools of Assam	DST	1.3 lakhs	1 year	Nirmali Goswami

PUBLICATIONS**In International and National Journals**

- Das Sarmistha. 2013. Re-examining the kinship organisations and gender roles. *Man and Society*, (accepted).
- Das, Amiya Kumar, and P K Nath. 2013. Agrarian distress and land alienation in India's North East. *Journal on Frontier Studies*, 1(1).
- Kikhi, Kedilezo. 2012. An evaluation of self-employment schemes in Nagaland. *Economic Challenger*, 14(55).
- Kikhi, Kedilezo. 2012. Contemporary political discourse on Naga identity and nationalism: a sociological analysis. *Man and Society: A Journal of North-East Studies*, 9 (3).
- Kikhi, Kedilezo. 2013. Land and tribal identity in contemporary Nagaland: insights from micro-level studies. *Journal on Frontier Studies*, 1(1).
- Punathil, Salah. 2013. Kerala Muslims and shifting notions of religion in the public sphere. *South Asia Research*, 33(1).
- Sharma, Chandan Kumar. 2012. The immigration issue in Assam and conflicts around it. *The Asian Ethnicity*, 13(3).

Other Publications**Books**

- Kikhi, K. (Ed). 2013. *The Dynamics of Development in North East India*. Delhi :Bookwell Publishers.
- Sharma, C K. (Ed). *History of the Frontier Areas Bordering on Assam: 1883-1941*. Guwahati: Bhabani, (in press).
- Sharma, C K. 2012. *Mapping the Trajectory of an Ethnic Identity Movement: The Case of the Misings of Assam*. Guwahati: Centre for Peace and Conflict Studies, Gauhati University.

Book Chapters

- Das, Amiya Kumar. 2013. Questioning 'education' and 'women's empowerment' in North-east, India: some reflections with special reference to Nagaland. In Kikhi, Kedilezo. *The Dyanamics of Development in North-East India*. New Delhi: Bookwell.
- Kikhi, Kedilezo. 2013. Illegal immigrants in NE India: what could be the implementable policy approach?. In Thomas, C J (ed). *Boundary Maintenance: Inclusion-Exclusion Dynamics in North East India*. New Delhi: SAGE.
- Kikhi, Kedilezo. State politics in India: Nagaland. In Mishra, R (ed). *State Politics in India*. New Delhi: Primus Books.
- Sharma, Chandan Kumar. 2012. Conflict over commercializing water: State water policy of Assam 2007. In *Compendium of Water Conflict Case Studies from the North-East*. In Das, P S et al (eds). Pune: Forum for Policy Dialogue on Water Conflicts.
- Sharma, Chandan Kumar. 2012. *Globalization, culture and change*. In Modi, Ishwar (ed). *Modernization, Globalization and Social Transformation*. Jaipur: Rawat Publishers.
- Sharma, Chandan Kumar. 2013. Contemporary peasant mobilisation in Assam: issues, leadership and resistance. In Baruah, A., and S sengupta. *Social Forces and Politics in Northeast India*. Delhi: DVS Publishers.

Book Reviews

- Amiya Kumar Das. 2013. S R Mehta: New understanding of Indian society: encounters with sociology. *Sociological Bulletin*, 61(3).
- Chandan Kumar Sharma. 2012. Rehman Sobhan: Challenging the injustice of poverty: agendas for inclusive development in South Asia. *Sociological Bulletin*, 61(2).
- Sumesh S S. 2013. Interrogating development: insights from the margins. *Sociological Bulletin*, 61(3).

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**International and National**

- C S Bhat presented a paper, Human rights challenges before Indian diaspora, in the international conference, Human Rights Concerns of Indian Diaspora, organized by Human Rights Defense International (HRDI), Constitutional Club, New Delhi, New Delhi, 10 January, 2013.
- C S Bhat presented a paper, Indian diaspora in the 21st century: opportunities and challenges, in the seminar, Diaspora Issues: Challenges & Opportunities, organized by GOPIO-Kochi Convention, Kochi, 5-6 January, 2013.
- C S Bhat presented a paper, Globalization, Indian Diaspora and Transnational Networks, in the international conference, Sociology Matters: Challenges and Possibilities of Social Science Knowledge in Contemporary India, organized by JNU, JUN, New Delhi, 18-20 December, 2012.
- C S Bhat presented a paper, Migration, development and gender: the Indian diasporic perspective, in the national seminar, Migration, Development and Gender in India: Issues and Concerns, organized by the Department of Sociology, DDU Gorakhpur University, Gorakhpur, 27 November, 2012.
- C S Bhat presented a paper, Indian diaspora and global organizations: communities and contested boundaries, in the international conference, India beyond India: Debating Communalism and Belonging, organized by Goettingen University, Goettingen, Germany, Germany, 24-26 May, 2012.
- Kedilezo Kikhi presented a paper, Migrants and immigrants in NE, India: A Case Study of ILP (1873) and Nagaland state, in the international conference, Looking Beyond the State: Changing Forms of Inclusion and Exclusion in India, organized by Japfu Christian College, Kigwema, Kohima, Kohima, 21-22 December, 2012.
- Kedilezo Kikhi presented a paper, What ails the Nagaland state? Existing issues and emerging challenges, in the national seminar, Society, Culture and Development: Emerging Issues in Nagaland, organized jointly by the Department of Anthropology, Kohima Science College, Jotsoma, and Asiatic Society, Kolkata, Kohima, 14-15 April, 2012.
- Kedilezo Kikhi presented a paper, Critiquing development thinking and planning for NE India, in the national seminar, Developing the Tribal: Situating North-East India, organized by Tribal Studies Centre, Assam University, Diphu Campus, Diphu, 9-10 March, 2012.
- Amiya Kumar Das presented a paper, The magic of elections: performance, citizenship and governance in Assam, in the national conference, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's North-East, organized by the Department of Sociology, Tezpur University, Tezpur, Tezpur, 7-9 March, 2013.
- Amiya Kumar Das presented a paper, Social structure of governance: a case from India's Northeast, in the international conference, Looking Beyond the State: Changing form of Inclusion and Exclusion in India, organized by Japfu Christian College, Kigwema, Kohima, Kohima, 21-22 December, 2012.
- Nirmali Goswami presented a paper, Coming a full circle: language of education in Assam, in the national seminar, Identity, Territoriality & Autonomy in North East India, organized jointly by OKD Institute for Social Change Development and Department of Sociology, Tezpur University, Tezpur, Tezpur, 5 March, 2012.
- Nirmali Goswami presented a paper, Literary organisations, students' union and language of education in Assam, in the national seminar, State, Social Movements and Democracy in Northeast India, organized by Gauhati University, Guwahati, Guwahati, 27 Feb-1 March, 2013.

Nirmali Goswami presented a paper, Issues of identity and education in the state of Assam, in the national conference, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's North-East, organized by the Department of Sociology, Tezpur University, Tezpur, Tezpur, 7-9 March, 2013.

Nirmali Goswami participated in the workshop, Capacity Building of Women Managers in Higher Education (SAM), organized by Women's Study Centre, Tezpur University, Tezpur, Tezpur, 3-7 September, 2012.

Sarmistha Das presented a Paper, Class in tribal society: a gendered perspective, in a seminar organized by Tribal Studies Centre Assam University, Diphu Campus, Diphu, Diphu, 22-23 February, 2013

Sarmistha Das participated in the workshop, Capacity Building of Women Managers in Higher Education (SAM), organized by Women's Study centre, Tezpur University, Tezpur, Tezpur, 3-7 september, 2012.

OTHER IMPORTANT ACTIVITIES

C S Bhat chaired a technical session at the international conference, India beyond India: Debating Communalism and Belonging, organized by Goettingen University, Goettingen, Germany, 24-26 May, 2012.

C S Bhat chaired the session, Finance and Politics, at the international conference, Between Global Aspirations and Local Realities: India's Cities in Interdisciplinary Perspective, organized by JNU, New Delhi, New Delhi, 26-28 March, 2012.

C K Sharma acted as a resource person and delivered the lecture, Philosophical Issues in Social Science Research, in the national workshop, College Teachers on Writing Research Papers, organized by GDG Commerce College, Nagaon, Nagaon, 22-23 March, 2013.

C K Sharma delivered the keynote address in the workshop, UGC National Workshop of College Teachers on Writing Research Papers, organized by Rangapara College, Rangapara, Rangapara, 13-14 Feb, 2013.

C K Sharma acted as a panelist in the panel discussion, Indian State's Engagement in Northeast India, in the national seminar, State, Social Movements and Democracy, organized jointly by the Department of Political Science, Gauhati University, Guwahati and ICHR (NERC), Guwahati, Guwahati, 27 Feb.-1 March, 2013.

C K Sharma delivered the valedictory lecture in the national seminar, Class Formation in the Tribal Societies of Northeast India, organized by Tribal Studies Centre and Department of Anthropology, Assam University, Diphu Campus, Diphu, 22-23 February, 2013.

C K Sharma acted as a panelist in the national seminar, Issues of Ethnic Identity and Ethnic Conflict in North East India, organized by the Department of Cultural Studies, Tezpur University, Tezpur, Tezpur, 29-30 January, 2013.

C K Sharma acted as a resource person and delivered the lecture, Trends in Social Science Research: An Overview, in the workshop, Workshop on Research Methodology, organized jointly by Omeo Kumar Das Institute of Social Change and Development, Guwahati and Equal Opportunity Cell, Tezpur University, Tezpur, Tezpur, 28 January-3 February, 2013.

C K Sharma acted as a resource person and delivered the keynote lecture in the seminar, A Dialogue on Foothill Border Conflicts in Northeast India, jointly organised by the Department of Sociology, Tezpur University, Tezpur and PAJHRA, Tezpur, Tezpur, 18-19 December, 2012.

C K Sharma acted as a panelist and delivered the lecture, Youths as a Social Force in Northeastern India, in the panel discussion, Youth and Social Change: Challenges and Opportunities in the Social sector,

organized jointly by AzimPremji University, Bangalore and Department of Sociology, Tezpur University, Tezpur, Tezpur, 8 October, 2012.

C K Sharma acted as a resource person and delivered the lecture, The Questions of Territory and Identity in Assam, in the national seminar, National Integration and Ethnic Groups of Assam, organized jointly by the Department of History and the Department of Political Science, Biswanath College, Biswanath Chariali, Biswanath Chariali, 14-15 June, 2012.

C K Sharma chaired the session, Tribal Issues and Challenges in Northeast India, in the national seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, organized jointly by the Department of Sociology, Tezpur University, Tezpur and ICSSR NERC, NEHU, Shillong, 7-8 March, 2013.

C K Sharma co-chaired the session, State, Middle Class and Minorities, in the national seminar, State, Social Movements and Democracy, organized by the Department of Political Science, Gauhati University, Guwahati and ICHR (NERC), Gauhati University, 27 February-1 March, 2013.

C K Sharma acted as a moderator in the national seminar, Issues of Ethnic Identity and Ethnic Conflict in North East India, organized by the Department of Cultural Studies, Tezpur University, Tezpur, Tezpur, 29-30 January, 2013.

R Deka acted as a discussant in the discussion, Curricular Sociology, in the international conference, Sociology matters: Challenges and Possibilities of Social Science Knowledge, organized by CSSS, JNU, New Delhi, New Delhi, 18-20 December, 2012.

R Deka acted as a resource person in the workshop, Workshop on Research Methodology, organized by MDKG College, Dibrugarh, Dibrugarh, 8-16 November, 2012.

R Deka acted as a resource person in the national workshop, Teaching Sociology at the U.G Level, organized by Dhemaji College, Dhemaji, Dhemaji, 22-23 February, 2013.

R Deka delivered the talk, State and Human Rights in Northeast India, in the workshop, Human Rights, organized by Equal Opportunity Cell, Tezpur University, Tezpur, Tezpur, March 21, 2013.

Kedilezo Kikhi presented the paper, Generalization of Results, in the workshop, Workshop on Research Methodology Course, organized by M D K G College, Dibrugarh, Dibrugarh, 8-10 November, 2012.

Kedilezo Kikhi acted as a panelist in the panel discussion, Youth and Social Change: Challenges and Opportunities in the Social Sector, jointly organized by the Department of Sociology, Tezpur University, Tezpur and Azim Premji University, Bangalore, 8 October, 2012.

Kedilezo Kikhi presented the paper, Present Trend and Future Scope of Research in Nagaland in the workshop, organized jointly by the Nagaland University Research Scholar's Forum, Kohima (NURSF-K) and SCERT, Kohima, Kohima, 5-6 July, 2012.

Kedilezo Kikhi acted as a resource person and delivered the lecture, How to Write Research Paper?, in the workshop, Workshop on Research Methodology in Social Sciences, organized by Equal Opportunity Cell (EOC), Tezpur University, Tezpur, Tezpur, 1-7 March, 2012.

S S Sumesh acted as a resource person and delivered the lecture, Challenges in Designing Social Science Research, in the workshop, Workshop on Research Methodology, organized jointly by Omeo Kumar Das Institute of Social Change and Development, Guwahati and Equal Opportunity Cell, Tezpur University, Tezpur, Tezpur, 28 January-3 February, 2013.

S S Sumesh acted as a discussant in the discussion, Tribal Issues and Challenges, in the national seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, organized jointly by the Department of Sociology, Tezpur University, Tezpur and ICSSR NERC, Shillong, 7-8 March, 2013.

S S Sumesh acted as a resource person and delivered the lectures, Designing Social Science Research, and Data Analysis and Interpretation, in the training-cum-workshop, Research Methodology in the Social Sciences, organized jointly by the Society for Social Research, New Delhi and ICSSR, New Delhi, New Delhi, 11-17 March, 2013.

S S Sumesh acted as a resource person and delivered the lectures, Academic Writing, and Research Design, in the programme, Capacity Building Programme for Faculty in Social Science, organized jointly by Equal Opportunity Cell, Tezpur University, Tezpur and ICSSR-NERC, Tezpur University, 14 March-27 March, 2013.

Nirmali Goswami acted as a panelist in the panel discussion, Identity Politics in Northeast India, organized by OKD Institute for Social Change and Development, place, date February, 2013.

Nirmali Goswami acted as a discussant in the discussion, Identity, Indigeneity and Homeland: Reflections on Northeastern India, in the national seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, organized jointly by the Department of Sociology, Tezpur University, Tezpur and ICSSR NERC, Shillong, 7-8 March, 2013.

Nirmali Goswami delivered the lecture, Human-Rights Based Approach to Education in the workshop, Human Rights Awareness, organized by Equal Opportunity Cell, Tezpur University, Tezpur, Tezpur, 23 March, 2013.

Sarmistha Das acted as a discussant in the discussion, Identity, Indigeneity and Homeland: Reflections on Northeastern India, in the national seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, organized by the Department of Sociology, Tezpur University, Tezpur and ICSSR NERC, Shillong, 7-8 March, 2013.

Salah P acted as a discussant in the discussion, Identity, Indigeneity and Homeland: Reflections on Northeastern India, in the national seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, organized by the Department of Sociology, Tezpur University, Tezpur and ICSSR NERC, Shillong, 7-8 March, 2013.

SEMINARS/WORKSHOPS/SYMPOSIA/EXTENSIONPROGRAMMES ORGANIZED BY THE DEPARTMENT

- National level training-cum-workshop, Research Methodology in the Social Sciences, in collaboration with Society for Social Research, New Delhi, funded by ICSSR, New Delhi, 11 March-17 March, 2013.
- National seminar, Interrogating Indigeneity, Citizenship and the State: Perspectives from India's Northeast, in collaboration with ICSSR NERC, Shillong, supported by Ministry of Home Affairs, Government of India, 7 March-9 March, 2013.
- A dialogue, Foothill Border Conflict in Northeast India, in collaboration with PAJHRA, Tezpur, supported by Action Aid, (place of the organization), 18 December-19 December, 2012.
- Panel discussion, Youth and Social Change: Challenges and Opportunities in the Social Sector, in collaboration with Azim Premji University, 8 October, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof Annete Gomis, University of Zaragoza, Spain

Dr Dolores Herrero, University of Zaragoza, Spain

NUMBER OF STUDENTS WHO PASSED NET/JRF/GATE

- JRF: 2
- NET: 12

FACULTY OF THE DEPARTMENT**Professors**

C S Bhat, MA (Delhi), PhD (Delhi)

Specialization/Areas of interests: Migration, Urban Sociology, Diaspora Studies, Social Stratification

E-mail: csbhatta@2k@yahoo.com

Mohammed Abdul Kalam, MA (Madras), PhD (Madras)

Specialization/Areas of interests: Migration, Identity Politics, Ethnicity, Environment and Society

E-mail: kalam@tezu.ernet.in

C K Sharma, MA (Delhi), MPhil (Delhi), PhD (Delhi)

Specialization/Areas of interest: Sociology of Development, Environmental Sociology, Social Movements, Identity Politics, Culture Studies, Northeast India.

E-mail: chandan@tezu.ernet.in

Associate Professors

R Deka, MA (Poona) PhD (Dibrugarh)

Head of the Department

Specialization/Areas of interest: Sociological Theories, Sociology of Movement, Agrarian Sociology

E-mail: rdeka@tezu.ernet.in

K Kikhi, MA (NEHU), PhD (NEHU)

Specialization/Areas of interest: Sociology of Northeast India, Gender and Society, Sociology of Development, Tribal Studies, Ethnic Movements.

E-mail: kedi@tezu.ernet.in

Assistant Professors

A K Das, MA (Delhi), MPhil (Delhi)

Specialization/Areas of interest: Sociology of Development, Research Methodology, Sociology of Medicine.

E-mail: amiyadas@tezu.ernet.in

S S Sumesh, MA (Kerala) MPhil, PhD (Kerala)

Specialization/Areas of interest: Social Stigma and Social Exclusion, Public Health, Environmental Sociology, Quantitative Sociology,

E-mail: sumesh@tezu.ernet.in

Nirmali Goswami (Ms), MA (BHU), PhD (IIT-Kanpur)

Specialization/Areas of interest: Sociology of Education, Identity Politics, Multiculturalism, Sociology of Language

E-mail: nirmalig@tezu.ernet.in

Sarmistha Das (Ms), MA (JNU), MPhil (JNU)

Specialization/Areas of interest: Gender Studies, Sociology of North East India

E-mail: sarmistha@tezu.ernet.in

P Salah, MA (Hyderabad), MPhil (JNU)

Specialization/Areas of interest: Sociology of Conflict and Collective Violence, Political Sociology, Sociology of Marginalized Communities

E-mail: salahp@tezu.ernet.in



School of Management Sciences

DEPARTMENT OF BUSINESS ADMINISTRATION

THE DEPARTMENT

The Department of Business Administration was opened in January 1995. The flagship programme of the Department is its 2-year Master's degree in Business Administration. The other programmes are Post Graduate Diploma in Tourism Management, and Doctor of Philosophy. The specialized areas include Human Resource Management, Financial Management, Marketing Management, Operations Management, and Systems.

The Faculty of the Department are actively engaged in research and other academic activities, availing of overseas fellowships, and participating in national and international seminars and conferences. The Department is awarded special assistance under UGC-SAP DRS-1. The Department has also been regularly organizing seminars, conferences, symposiums, and refresher courses. It has also been conducting MDPs/FDPs for the corporate executives and academics. The Department is rated A3 by AIMA in 2012. The students of the Department have been bagging various prizes by participating in extra-curricular activities organized in and outside the University.

ACADEMIC PROGRAMMES

- PhD
- MBA (Full-time)
- Post-Graduate Diploma in Tourism Management (PGDTM)

STUDENT INTAKE

Programme	Student Intake
MBA (Full-time)	50
PGDTM	23
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

The Department has one air-conditioned Boardroom which facilitates for case discussions. Classrooms have audio-visual facilities such as LCD projectors.

The Department has a small library-cum-reading room, a fully air conditioned seminar hall and a training hall. The Office is equipped with a modern office automation system.

MAJOR RESEARCH FINDINGS/RESEARCH & DEVELOPMENT ACTIVITIES

The Department has been on a SAP-DRS-I (UGC) project on Micro-Finance and Livelihood and has completed the base line survey. A workshop was conducted to discuss the survey result.

RESEARCH PROJECTS: ONGOING AND NEW

Project Titles	Funding Agency	Amount in INR	Duration	Principal Investigator
Financial Inclusion In Assam: Achievements and Hindrances	Indian Council of Social Science Research, New Delhi	5.19 lakhs	3 years	D Das
Empowerment of SC/ST Women through SHGs in Assam	NECRD, Indira Gandhi National Open University, New Delhi	2.5 Lakhs	3 years	D Das
Entrepreneurship Development Incentives	AICTE	5.9 Lakhs	3 years	S S Sarkar
Impact Assessment of Microfinance Programme in Sonitpur District of Assam	UGC	1.4 lakhs	1 year	A Roy

PUBLICATION**In International and National Journals**

- Baruah, P., and B Barthakur. Assessing beneficiary satisfaction with service delivery of non-governmental organizations. *International journal of scientific Research*, 1, (2), 2012.
- Baruah, P., and B Barthakur. Employees' attitude: performance and satisfaction. *SCMS Journal of Indian Management*, IX, (III), 2012.
- Baruah, P., and B Barthakur. HRM practices and outcomes. *Sidhant*, 12, (2), 2012.
- Baruah, P., and B Barthakur.. Impact of employee's attitude on service delivery performance and beneficiary satisfaction: a case study on non- governmental sector healthcare: a key sector in the service industry. *Social Science Journal of Gargaon College*, 1, 2013.
- Baruah, P., and B Barthakur.. Impact of knowledge management on the organizational performance: a case study on NGO's of Assam. *ISMS Journal of Business spectrum*, 1, 2013.
- Baruah, P., and N Chomal. Achieving organizational efficiency in a globalized era through performance management: a case study on small enterprises of the Sonitpur District in Assam. *IFRSA Business Review*, 2(1), 2012.
- Baruah, P., and D Subedi. Employee's commitment and organizational performance: a study of a cooperative jute mill in India. *Indian Journal of commerce and Management Studies*, I iii(3), 2012. 92-99.
- Baruah, P. Motivation for Teamwork and individual development: a study in Regional Medical and Research Centre in India. *Asian Journal of Research in Business, Economics and Management*, 2(9,) 2012.
- Baruah, U K., and M K Sarma. Tourists' indulgence towards unplanned expenditure: a study in an emerging destination. *Tourism Review International*, 16(3/4), 2013. 239-246.
- Bhuyan, A. Perspectives on ethical practices in border trade. *Research in Social Science and Linguistics*, 2 (1), 2012. 180-188
- Bhuyan, A., and S Chakraborty. A Review of the role of social capital in sustainable livelihood applications. *Eco-centric*, VIII, 2012. 31-46 .
- Goswami, Chandan and B Choudhury. Local economic impact of tourism based on national parks: a case study of the Kaziranga National Park. *Journal of Social Science*, Bodoland University, 1 (1), 2013. 14-24.
- Goswami, Chandan and R Borkotoky. Women involvement in tourism industry: a study of the Kaziranga National Park. *Indian Journal of Social-Science and Sciences*, 2(2), 2012. 145-149.
- Goswami, Chandan and B Choudhury. Tourism revenue leakage check. *SCMS Journal of Indian Management*, 10(1), 2013. 67-77.
- Mahanta, K., and P Bezborah. Measuring work life balance of academics: a study of female teacher in higher education. *Research Promoter*, III, 2013.
- Phatowali, A., and S S Sarkar. Determinants of saving habits of unbanked urban adults: an empirical study in Assam, India. *Research Journal of Economics and Business Studies*, 2 (4), 2013. 70-92.
- Roy, A. Agricultural finance vs. profitability of microfinance institutions : a case study of the MFIs of Assam. *Asia Pacific Journal of Marketing & Management Review*, 1 (3), 2012.1-17.

- Roy, A. Is Microfinance outreach at the cost of profitability? a case of the microfinance institutions in Assam. *Pacific Business Review International*, 5(6), 2012. 50-63.
- Sarkar, S S., and S K Pandey. Role of development institutes for promoting entrepreneurship - a case study on cmjsy and pmegp. *Indian Journal of Applied Research*, 3(1), 2013.109-110.
- Sarkar, S S., and A Phatowali. Urban financial inclusion: analysis of bankers perception: an empirical study in Assam. *International Journal of Business and Management Research*, 2(5),2012.
- Sarkar, S S., and A Phatowali. Financial inclusion in urban india: a study in the state of assam. *Journal of Social and Management Sciences*, XLI (4), 2013. 313-342.
- Sarkar, S S., S Dutta, and P A Dutta. Review of Indian index funds. *Global Business Review*, 14(1), 2013. 89-98.
- Sarma, M K., and U K Baruah. Destination information sources: a spatial study across time and expenditure. *IUP Journal of Marketing Management*, XII (1), 2013. 59-69.
- Sarma, T R., and P Choudhury. Interventions for zero-error operation in a digitally controlled warehouse. *International Journal of Scientific and Engineering Research (IJSER)*, 4(4), 2013. 1180 -1188.
- Tiwari, R K., and D Das. Methodological issues in determining poverty lines. *Research Promoter*, III, 2013.

Conference proceedings

- Roy, A. Does sustainability depend on age? – a case study on the MFIs of Assam. In Proceedings of the National Seminar on Microfinance and Sustainable Development in North-East India, Lakhimpur Commerce College, Lakhimpur, 30-31, May 2012.
- Sarkar S S. Goods and service tax: a roadmap for India. In Proceedings of the International Conference on Law, Humanities and Management, Singapore, July, 2012.
- Sarma, T R., and A Dutta. Framework for a study on parameters affecting quality of Assam silk. In Proceedings of the 2nd International Conference on Advancement in Engineering and Management, at RITS, Hyderabad, 27-28 February, 2013.
- Sarma, T R. Sustainability of the waste management practices in tourist destinations of Nagaland: a critical review. In Proceedings of the National Seminar on Promotion of International Tourism in North East India: Prospects, Priorities and Strategic Options, Assam University, Silchar, 8-9 March, 2013.
- Sarma, U., and M K Sarma. Drivers of online shopping: an exploration in five Indian cities. In Proceedings of the 5th Conference on Marketing in Emerging Economies, the Indian Institute of Management, Ahmedabad, 9-11 January, 2013.

Other publications

Book chapters

- Baruah, P., and B Barthakur. Effectiveness of capacity building initiatives of non-governmental organizations: a case study of the Centre for Rural Development. In Mahanta, P J., C Sharma, B K Saikia (eds). 2012. *Millenium Development Goals and Human Development Performance in North East India*. Dept of Economics, Morigaon College. Morigaon: Morigaon College.
- Baruah, P., and B Barthakur. Employees as catalysts for sustainable service delivery- a case study on NGOs in Assam. In Sarma, B K., and M K Dutta (eds). 2012. *Sustainable Development in North East Region*. Kaliabor: Koliabor College.
- Bhuyan, A. The principal motivating factors of entrepreneurial growth in tourism industry in Assam. In De, U. K., & Das, M. (Eds). 2012. *Economy of North East India: Challenges and Tasks Ahead*. Guwahati: Binapani Publishing House.
- Das, D., and P Dutta. 2012. Microfinance in Assam: an overview. In Agarwal, A. K., Singh, Bhartendu., & Vanlalchhawana. *Regional Case Studies in Microfinance*. Guwahati: DVS Publishers.

- Goswami, Chandan. Community's involvement in rural tourism destinations: a case study of the Manas National Park. In De, U. K. & Das, M. (Eds). 2012. *Economy of North East India: Challenges and Tasks Ahead*. Guwahati: Binapani Publishing House, 2012.
- Roy, A. Measuring social efficiency of mfis growth: a case study of Assam. In Singh, S. K., Mathur, H. P., & Lal, Madan. (Eds). 2013. *Microfinance (Issues and Challenges)*. New Delhi: Shree Publishers & Distributors.
- Roy, A. Microfinance initiatives for the development of the North-East India. In Ahmed, J. U. (Eds). 2012. *Agriculture and Rural Development - A Foretaste*. Guwahati: DBS Publisher.
- Roy, A. Microfinance practices of the MFIs of Assam: How costly is it? In Hazarika, P. K., & Goswami, B. Ch. (Eds). 2012. *Micro Finance Through SHG - A Mechanism for Poverty Alleviation*. Nagaon: Krantika Prakashan.
- Roy, A. Operating sustainability of the microfinance: a case study of the MFIs of Assam. In Sarmah, G. N. (Eds). 2013. *Microfinance and Sustainable Development in North East India*. Delhi: Commonwealth Publishers Pvt. Ltd.
- Sarma, M K., and U Baruah. Sources of information and the overview of tourists' feedback in North East India. In De, U K., and M Das (eds). 2012. *Economy in North East India: Challenges and Tasks Ahead*. Guwahati: Binapani Publishing House.
- Sarma, M K., and S Goswami. Customer delight in the hotel industry: an exploratory study. In Bagri, S. C., Mahar, S S., and S Uniyal (eds). 2013. *Tourism and Hospitality Industry: Application and Role of Science & Technology*. Dehradun: Centre for Mountain Tourism and Hospitality Studies, HNB Garhwal Central University.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- Heera Barpujary attended a Faculty Development Programme on Contemporary and Modern Approaches of Teaching Methods for Management Students, organized by Gyan Sagar Group of Institutions, Guwahati, 4-16 June, 2012.
- Heera Barpujary attended the ISTE Workshop on Aakash for Education, Conducted by IIT, Mumbai, 10 - 11 November, 2012.
- Chandana Goswami attended the Assessors Training of NAAC at Bangalore, 22-23, June, 2012.
- Chandana Goswami attended the ISTE Workshop on Aakash for Education, Conducted by IIT, Mumbai, 10-11 November, 2012.
- Chandana Goswami presented a paper, Pedagogical Changes for Sustainability: Focusing on Moral Hazards, at AIMS Convention, Hyderabad, 25 - 27 August 2012.
- P. Baruah participated in the Case Writing workshop at IIM Calcutta, 14-15 June, 2012.
- P Baruah presented a paper, Human Development Initiatives through Services of Non-Governmental Organizations: A Beneficiary Perspective, at a UGC sponsored national seminar, Human Development in North East India: Issues and Challenges, organized by Borbhag College, 31 August- 1 September, 2012.

P Baruah presented a paper, Performance Management as an Effective Tool for Identifying Training Needs of Enterprises, at a UGC sponsored national seminar, Entrepreneurship Development Efforts and Training Needs Assessment for Growth of North East India, organized by GNDG Commerce College, Nagaon, Assam, September, 2012.

K Mahanta attended a workshop on advanced research methodology and statistical analysis organized by Gautam Buddha University, Greater Noida, 1-7 July, 2012.

K Mahanta presented a paper, Employer Branding: The Key to Attract Potential Candidates, at an international seminar, Economics, Politics and Civil Society, organized by Divine Group, 2-3 January, 2013.

K Mahanta attended the FDP on ERP Overview and Oracle Appreciations conducted by TATA consultancy services, 13 June, 2012.

T R Sarma attended the the ISTE Workshop on Aakash for Education, Conducted by IIT, Mumbai, 10-11 November, 2012.

R Das attended the FDP on ERP Overview and Oracle Appreciations conducted by TATA consultancy services, 13 June, 2012.

M Dutta participated in the Centered Learning Seminar organized by Harvard Business Publishing at IIM, Bangalore 6- 8 January, 2013.

M Dutta participated in a workshop, Six Sigma, conducted by ISI Bangalore, 21-24 January 2013.

M Dutta attended a Faculty Development Programme on Contemporary and Modern Approaches of Teaching Methods for Management Students, organized by Gyan Sagar Group of Institutions, Guwahati, 4-16 June, 2012.

A Roy presented a paper, Does Sustainability Depend on Age? – A Case Study on the MFIs of Assam, at a national seminar, Microfinance and Sustainable Development in North-East India, organized by Lakhimpur Commerce College, 30-31 May, 2012.

S S Sarkar presented a paper, Goods and Services Tax: A Road Map for India, at an international conference, Law, Humanities and Management, organized by Plenary Scientific Centre, Singapore, Singapore, 15-16 July, 2012.

S S Sarkar attended the 6th Singapore International Conference, organized by the Centre for Asset Management Research & Investment and Department of Finance, National University of Singapore (NUS) Business School at NUS, Singapore, 17-18 July, 2012.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Oration on Vedic Foundations of Indian Management (on the Remembrance Day in the Memory of the Late Prof M C Bora), 16 November, 2012.
- Training Programme for the Executives of the Power Grid, Guwahati, October 2012.
- A 3-day residential MDP for Executives (Enhancing Competencies for Organizational Effectiveness), 11-13 December 2012.
- National Seminar (organized by Vedic Foundations of Indian Management, (A Unit of ISOL Research Foundation) and hosted by the Department of Business Administration on Relevance of Vedic Texts in Modern Management, 17-18, November 2012.
- Six Sigma Green Belt Certification Programme (in collaboration with ISI, Bangalore), 21-24 January, 2013.

- A one-day UGC SAP-DRS-I Initiative Workshop on Designing Contemporary Livelihood Interventions, 22 January, 2013.
- Training program for the Staff of the Baptist Christian Hospital, Tezpur, January 2013.
- The 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools, 28 January-3 February, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

Arup Roy delivered three talks on how to sit for an exam in the Residential Personality Development Programme for School Students (Class VII to IX) organized by the Vivekananda Kendra, Tezpur, 3-5 July, 2012.

Chandan Goswami delivered 3 talks at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January-3, February, 2013.

Chandana Goswami delivered a talk at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January -03, February, 2013.

Chandana Goswami delivered a talk, Communication, at the Staff Development Programme organized by GIMT Guwahati, 7 May, 2012

Chandana Goswami delivered a talk, Qualitative Research Methodology, at Jorhat Amalgamted College, Jorhat, 12 April, 2012.

D Das delivered a talk at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January-3, February, 2013.

H Barpujary delivered 3 talks at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January-3, February, 2013.

K Mahanta delivered 3 talks at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January-3, February, 2013.

S S Sarkar delivered a talk at the 3rd Weeklong Professional/Faculty Development Programme on Quantitative Research Tools organized by the Department of Business Administration, Tezpur University, 28 January-3, February, 2013.

DISTINGUISHED VISITORS TO THE DEPARTMENT

B B Sangma, Banking Ombudsman, Reserve Bank of India, Guwahati

Deepanjali Borborah, Sr Manager (T&D), Oil India Limited, Duliajan, Assam

B K Saroj, Director, Raj Yog Centre, Vasant Kunj, New Delhi and Management Faculty in Brahma Kumari University

Dr B Talwar, Additional. General Manager, BHEL, New Delhi

Gerry Rodgers, Institute of Human Development, New Delhi.

M P Bezbaruah, Former Secretary, Government of India

Pradip Kumar Das, General Manager, IDBI Bank, Kolkata

Dr Prem Kumar Saran, IAS (Retd), Vice Chancellor, University of Science and Technology Meghalaya

Satya Narayan Sahu, Joint Secretary, Rajya Sabha, Secretariat, New Delhi

Prof Uttam Kumar Sarkar, Professor, Indian Institute of Management, Calcutta

V Maruthi Ram, Chief General Manager, NABARD, Guwahati, Assam.

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

- The Department was rated A3 by AIMA in the year 2012.
- The Department was awarded the 3rd Asia's Best B-School Award for its innovation in teaching methodology in 2012.
- The paper, Goods and Services Tax: A Road Map for India, as presented by S S Sarkar was awarded the Best Session Research Paper at the International Conference, Law, Humanities and Management organized by Plenary Scientific Centre at Singapore, 15-16 July, 2012.

OTHER IMPORTANT ACADEMIC ACTIVITIES

Chandana Goswami was invited as Speaker to the International Women's Day organized by WIPS Oil India Ltd., March 2013.

Chandana Goswami was invited as resource person by Gargaon College, Sibsagar, to an IQAC workshop, November 2012.

Chandana Goswami was a Member o NAAC Peer Team 2012 (Tiruchirapally and Mysore).

D Das acted as Chairperson at a technical session, National Seminar on Microfinance, Lakhimpur Commerce College, Lakhimpur, 30 May, 2012.

D Das acted as Resource Person at a national workshop, Re-thinking Livelihoods: Innovations in Teaching Livelihoods, organized by XIMB, Bhubaneswar, 14-15 March, 2013.

D Das acted as resource person at the Skill Development programme conducted by EDC, Tezpur University, 27 April, 2012.

D Das acted as resource person at the Workshop on API organized by ACTA Nagaon- Morigaon Zone and TCADP College, Nagaon, 27 April, 2012 .

D Das acted as resource person at the Workshop on Teaching Methodology in Commerce under Semester System organized by K C Das Commerce College, Guwahati, 16 June, 2012.

D Das acted as resource person at the Staff Development Programme at GIMT Guwahati, 12 May, 2012.

M K Sarma acted as resource person in the Annual Dealers Convention of the Indian Oil Corporation Limited and deliberated on Customer Service (Silchar Integrated Region), 20 February, 2013.

M K Sarma acted as the Chief Resource Person (conducted seven sessions) in the workshop, Research Methodology for Social Sciences for the College Teachers and Research Scholars for the North eastern India, organized by St. Claret College, Ziro, Arunachal Pradesh, 8-9 February, 2013.

M K Sarma acted as the Principal Resource Person (conducted eight sessions) in the workshop, Faculty/Professional Development Programme on Quantitative Research Tools, organized by the Department of Business Administration, Tezpur University, 28 January-3 February, 2013.

P Baruah acted as resource person in the UGC- SAM Workshop organized by Tezpur University, Tezpur University, September 5, 2012.

S S Sarkar acted as the keynote speaker at a national seminar, Changing Dimension of Management Practices in India, Vidyasagar University, Midnapore, West Bengal, 23 March, 2013.

THE FACULTY OF THE DEPARTMENT

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*School of Management Sciences***CENTRE FOR DISASTER MANAGEMENT****THE CENTRE**

The Centre for Disaster Management was established in 1997 under the Central Sector Scheme of NDM Division, Ministry of Agriculture and Cooperation, Government of India. The scheme was subsequently transferred to the Ministry of Home Affairs, Government of India in 2002. At present the Centre is being funded by the Ministry of Home Affairs, Government of India through the National Institute of Disaster Management, New Delhi. The main functions and activities of the Centre have been to:

- Organising and conducting training programmes, conferences, and workshops on disaster management
- Extending academic support to other organisations
- Conducting regular courses on Disaster Management.

NEW COURSES

One Inter-disciplinary Course on Disaster Management (DM 301) was introduced during 2012-13 for the students of the University.

As per UGC guidelines a proposal for an optional paper on Disaster Management (DM 302) to be taught at undergraduate level from August, 2013 has been submitted to the University.

The Centre taught the courses DEM 104 and DEM 203 on the Post Graduate Diploma in Environmental Management Programme offered by Centre for Open and Distance Learning, Tezpur University.

TRAINING PROGRAMMES

During 2012-13 the Centre organised a raining programme on *Earthquake and its Damage Mitigation Approaches* at 10 different schools of Tezpur Sub-division.

SI No	Name of the Schools	Dates	No of participants
1	Sankardev Sishu Vidya Niketon, Tezpur, Sonitpur, Assam	18 February, 2013	94
2	Sacred Heart High School, Tezpur, Sonitpur, Assam	21 February, 2013	65
3	LOKD Girls' High School, Tezpur, Sonitpur, Assam	26 February, 2013	93
4	Don Bosco High School, Tezpur, Sonitpur, Assam	28 February, 2013	80
5	Tezpur Govt. Boys' H. S. School, Tezpur, Sonitpur, Assam	12 March, 2013	49
6	Tezpur Collegiate High School, Tezpur, Sonitpur, Assam	13 March, 2013	76
7	Tezpur Govt. Girls' H. S. School, Tezpur, Sonitpur, Assam	14 March, 2013	59
8	Tezpur Chariali Girls' High School, Tezpur, Sonitpur, Assam	18 March, 2013	81
9	Tezpur Bengali Boys' H. S. School, Tezpur, Sonitpur, Assam	21 March, 2013	27
10	St Paul English High School, Rangapara, Sonitpur, Assam	25 March, 2013	76

- Organised training (in association with SAVE, Tezpur) for the students from ICFAI University, Tripura, Tezpur University, 5-9 July, 2012.

- Organised training in association with Disaster Mitigation Society, Guwahati for Security Personnel, Tezpur University, 20-26 September, 2012.

SUPPORT EXTENDED

- The centre extended academic support to outreach programmes of the University.
- The Centre extended academic support to the Diploma Programme on Tourism Management of the University.
- Prepared study material for the course *Planning for Risk and Crisis Management* offered by the Centre for Open and Distance Learning, Tezpur University.
- Extended help in organising relief camps at different flood affected areas of the State.

PARTICIPATION

D Nath and R Debnath presented a paper, *Educational status of the tea garden labours of Barak Valley* at an international seminar, Human Development and the Marginalised Sections in Northeast India: Issues, Challenges and way Forward, Assam University, Silchar, 18 – 20 March, 2013.

The Centre took part in the Brainstorming Workshop, Preparation of Activity Guide 2012-13 for National Children's Science Congress, organised by NCSTE, DST, GoI, Tezpur University, 2-4 May, 2012.

FACULTY

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SCHOOL OF SCIENCES

DEPT OF CHEMICAL SCIENCES
DEPT OF ENVIRONMENTAL SCIENCES
DEPT OF MATHEMATICAL SCIENCES
DEPT OF MOLECULAR BIOLOGY AND BIO TECHNOLOGY
DEPT OF PHYSICS



*School of Sciences***DEPARTMENT OF CHEMICAL SCIENCES****THE DEPARTMENT**

The Department of Chemical Sciences was established in the year 1997 with the prime objective of creating manpower in different areas of Chemical Sciences. Initially the Department offered an MSc programme in Polymer Science. The Department started an Integrated MSc in Chemistry in 2009, and an MSc in Chemical Sciences in 2010. Since autumn 2011, the Department has been offering an MTech in Polymer Science & Technology and an Integrated BSc BEd in Chemistry. The Department has also been running a PhD programme covering several important areas of research in Chemical Sciences. The Department has eighteen well-experienced (both in academy and industry) and highly qualified faculty members including one inspire faculty and one faculty on adhoc basis, who are actively engaged in research in various fields of Chemical Sciences. During the last five years, the faculty of the Department has produced 200 high quality publications in peer reviewed international journals and successfully completed more than 20 major research projects. The Department is well equipped with sophisticated equipment and library facilities. The alumni of the Department are well placed in different industries, R&D organizations and other prestigious institutes in India and abroad.

ACADEMIC PROGRAMMES

- MSc in Chemistry
- Integrated MSc in Chemistry
- PhD in Chemical Sciences
- MTech in Polymer Science and Technology
- Integrated BSc-BEd

STUDENT INTAKE

Programme	Student Intake
MSc in Chemical Sciences	20
Integrated MSc in Chemistry	15
MTech in Polymer Science & Technology	10
Integrated BSc-BEd	10
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- 400 MHz NMR spectrophotometer, Jeol
- GCMS, PerkinElmer
- Thermal Analyzer, (Model TGA-50 & DSC-60, Shimadzu (FIST Funded)
- CHN Analyzer, Model PR 2400 Series II Perkin Elmer (FIST Funded)
- FTIR spectrophotometer, Model: Nicolet Impact I-410
- Automated Compression Press, S5 Type, Santac
- Polarizing Microscope, Olympus, M B201
- UV-Visible Spectrophotometer, Shimadzu, UV-2550 Model Carry 100 Bio
- Universal Testing Machine, 10 KN Zwick
- Rheometer, Bohlin Instruments
- Microwave reactor
- High performance computational facilities

- Digital Polarimeter
- Millipore Water Purification System
- Table Top Magnetometer
- Single Screw Laboratory Extruder
- Cyclic Voltameter

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

Principal Investigator	Research Findings
S K Dolui	<ul style="list-style-type: none"> • We have developed some stimuli-responsive hydrogels based on Poly(vinyl alcohol)-g-Polyacrylic acid/OMMT clay, Poly(acrylamide-co-acrylic acid)/graphite, Carboxymethyl cellulose –g-Polyacrylic acid/MMT etc. • A novel and highly sensitive electroanalytical sensing nanocomposite material consisted of polypyrrole (PPy), graphene (GR) and glucose oxidase (GOD) has been prepared for the development of a glucose biosensor. PPy/GR nanocomposite was prepared by liquid/liquid interfacial polymerization. • <i>Jatropha curcas</i> oil based polyol and Epoxydized <i>Jatropha curcas</i> oil have been prepared. Polyol and epoxidized oil have been used to prepare alkyd resin with different compositions of Maleic anhydride, melamine and phthalic anhydride and composite has been prepared using different fillers like expanded graphite, graphene oxide, MMT and bentonite (Organically modified and unmodified). • Star shaped polymers with various arm numbers and compositions have been synthesized by application of Atom Transfer Radical Polymerization and click coupling methods. Vinyllic-fluorescent monomers were prepared and respective star polymers and copolymers were synthesized.
N S Islam	<ul style="list-style-type: none"> • Synthesised a series novel co-ordination polymeric compounds by incorporating transition metals viz., Vanadium(V), Molybdenum(VI) and Tungsten(VI) into water soluble as well as water insoluble polymer matrices. The compounds were characterized on the basis of detailed spectroscopic as well as physico-chemical techniques. • Thermal stability of the compounds in solid state of the compounds in solid state was ascertained by using TGA-DSC. Hydrolytic stability of the compounds were investigated by using ^{51}V-NMR, ^{95}Mo and ^{183}W –NMR techniques. <p>Biochemical application: The water soluble macro complexes were found to be:</p> <ul style="list-style-type: none"> • Reasonably resistant to catalase • Potent inhibitors of alkaline phosphatase activity • Exert vascomodulatory effect on rat aorta <p>Application as catalyst</p> <ul style="list-style-type: none"> • Some of the synthesized compounds could serve as efficient homogeneous / heterogeneous catalysts for oxidation of organic sulfides to sulfoxide or sulfone with very high turn-over frequency (TOF) under environmentally benign conditions.
T K Maji	<ul style="list-style-type: none"> • Green nanocomposites were prepared by using bio degradable polymers and natural fibres. These composites showed improved properties in terms of mechanical strength, dimensional stability and thermal stability. • Soft wood was modified by using water soluble polymer, crosslinker and

	<p>nanoparticles. Modified wood showed enhanced mechanical properties, fire retardancy and dimensional stabilities.</p> <ul style="list-style-type: none"> Chitosan derivatives were prepared and characterized. Drug encapsulated chitosan nanoparticles were prepared and evaluated. The swelling, release behaviour in different pH environment were studied. Mucoadhesivity and cytotoxicity were checked and found satisfactory.
R K Dutta	<ul style="list-style-type: none"> Development of an arsenic and iron removal technology. A highly efficient, green, low-cost and user-friendly method of removal of arsenic and iron from contaminated groundwater has been developed. The method is based on oxidation-coagulation at optimized pH using some common non-toxic chemicals. Development of a technology for removal of fluoride from contaminated water is in progress. The results obtained so far are very encouraging. We are adding to the knowledge on combined hydrophobic and electrostatic interactions through our research on hydrophobic ion pair formation. We are also gathering some new information on polymer-surfactant interactions in aqueous media.
N Karak	<ul style="list-style-type: none"> The immobilization of biomolecules onto pristine and PEGylated electrospun cellulose acetate mats for prospective biomedical applications has been attempted. Research work in the arena of nanostructured materials have been made to explore greener route to functionalize MWCNTs using microwave irradiation, reduction of graphene oxide (GO) by using the reduction potential of a few phytochemicals and preparation of carbon dots from aqueous fruit juice. The preparation of the nanoclay (bentonite)/PAN nanofibers nanohybrid for toxic gas sensing application has been attempted. The potential of vegetable oil modified hyperbranched polyurethane as a scaffold for tissue engineering has been made. Biobased hyperbranched polyurethanes and their MWCNT based nanocomposites were investigated as shape memory materials. Hyperbranched epoxy thermosets with excellent adhesive strength were studied.
R C Deka	<ul style="list-style-type: none"> We perform DFT calculations to investigate electronic structures and reactivities of metal nanoclusters, carbon nanotube, drug molecules, supported metal clusters and encapsulated metal complexes. We have investigated the kinetics of decomposition of volatile organic compounds (VOC) such as CFC, HFC etc. using theoretical methods. Very recently, adsorption of oxygen on gas phase and faujasite supported Au monomer has been studied using hybrid quantum mechanics/molecular mechanics method SIMOMM implemented in GAMESS program. Three different oxidation states of Au (0, +1, +3) and three different adsorption modes of oxygen viz. top, bridged and dissociated have been considered in our calculations. Our results indicate activation of O₂ upon adsorption on faujasite supported Au evident from the red shift in the ν_{O-O} value from that in gas phase O₂. The activation of O₂ is an important step in the catalytic oxidation of CO. The presence of adsorbed O₂ increases the interaction of the Au monomer with the faujasite support. Our calculations also indicate that the bridged mode of O₂ adsorption is more favorable in neutral Au while both bridged and dissociative modes are favorable in singly charged Au and only the dissociative mode in Au³⁺. We have also investigated CO oxidation over faujasite supported Au monomer using density functional theory. Our calculation shows that CO oxidation

	<p>proceeds via an Eley-Rideal type mechanism with O₂ adsorbed on the supported monomer and CO reacting from the gas phase. The oxidation of CO does not require dissociative adsorption of O₂ and the release of the first CO₂ molecule involves very low activation barrier leaving atomic oxygen adsorbed on Au that can be easily reacted off by another CO molecule. The generation of the second CO₂ molecule is slightly endothermic which can easily be overcome by the energy gain in the process. Our results are in very good agreement with experimental reports. This is first theoretical work describing details of CO oxidation over zeolite supported Au cluster.</p>
R Borah	<ul style="list-style-type: none"> Synthesis of xanthenedione derivatives under solvent-free method Microwave assisted synthesis of oximes Diastereoselective synthesis of 2-nitro-alkanol
A J Thakur	<p>Main focus was on nano catalysis and bioactive molecules.</p> <ul style="list-style-type: none"> An expeditious, simple, highly efficient, practical and green protocol for the N-formylation of alkyl/aryl amines and indole derivatives catalyzed by novel nano rod-shaped basic Al₂O₃ under solvent-free conditions has been developed. The catalyst is efficiently recycled up to the 5th run, an important point in the domain of green chemistry. The methodology provides cleaner conversion, shorter reaction times and high selectivity which make the protocol attractive. One-pot synthesis of novel fused bis-pyrimido-[4,5-<i>d</i>]pyrimidine derivatives by a three-component reaction of 6-[(dimethylamino) -methylene]1,3-dimethylaminouracil, terephthaldehyde and amino derivatives has been depicted. The structures of the compounds were established by various spectroscopic methods and single-crystal X-ray crystallography. Long range <i>W</i>-Coupling constant in ¹H-NMR spectrum is an infrequent example, where our synthesized novel compounds show such distinctive constant. The synthetic strategy provides an efficient way to the synthesis of bis-pyrimidine-fused heterocycles that can be explored for further potential pharmaceutical or biological activities.
P Puzari	<ul style="list-style-type: none"> The main focus of our research was to develop novel pesticide biosensors by using conducting polymers. Extensive study was made to explore the feasibility of exploiting polypyrrole-acetylcholinesterase (AChE) combination for constructing pesticide biosensors. An amperometric biosensor was developed by using polypyrrole-AChE combination and tested its performance using sample OP pesticides ethyl paraoxon. <p>The results found to be encouraging ones. An article on this has been submitted to a journal. Similar work with polyaniline is being carried on. We have also studied the spectroscopic properties of mono and difluoro benzene and that of Zundelcation (H₅O₂⁺), using TDDVR. An article on this has been published in the journal PCCP.</p>
K K Bania	<ul style="list-style-type: none"> Some Schiff base complexes of Iron and picolinato complexes of Cu(II), Co(II) and Ni(II) has been synthesized inside the cavity of zeolite-Y and are used as heterogeneous catalyst. The synthesized Iron complexes are found to show excellent catalytic activity in oxidative coupling of 2-naphthol and the corresponding bis (Picolinato) complexes are found to oxidize phenol to catechol selectively.
P Bharali	<ul style="list-style-type: none"> Nanostructured Co₃O₄ and CuO with various morphologies were synthesized with the manipulation of synthetic parameters by

	hydrothermal and modified solvothermal techniques. The metal oxides were characterized by XRD, SEM, EDX, TEM, BET surface area, TG DTA and other methods. The metal oxides have been employed for dye adsorption properties.
N Gogoi	<ul style="list-style-type: none"> Several novel transition metal complexes in unconventional geometry have been prepared and structurally characterized. Their efficacies in building single molecule magnets through construction of heterobimetallic ferrimagnetic species are being investigated.
B C Sarma	<ul style="list-style-type: none"> Pharmaceutical co-crystal strategy has been projected for two important organic molecules namely Ferulic acid (precursor in the manufacture of aromatic plant compounds) and Theophylline (in therapy for respiratory diseases such as COPD and asthma) in order to ameliorate associated inadequate solubility and stability issues. Several co-crystals of Theophylline have been prepared and structurally characterized. Study on their efficacy in terms of physical stability, moisture absorption, improve dissolution behavior are ongoing.
S Pratihari	<ul style="list-style-type: none"> The present aim of research is to design of hybrid ligand for chelation assisted benzylic C-H activation and their application to catalysis. For this purpose, special types of ligands having different donors for metal binding along with their effect towards catalysis have been designed. In order to explain the probable mechanism for C-H activation DFT investigation should be performed on the probable activated and transition state.

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
Graphene/graphene oxide based polymer nanocomposite as biosensor and super capacitor	CSIR	15.00 lakhs	3 years	S K Dolui
Development of stimuli responsive polymeric hydrogel and their application	DRDO	28.29 lakhs	3 years	S K Dolui
Development of polymer nano composite based photovoltaic device with improved efficiency	DIT	92.00 lakhs	3 years	S K Dolui
Preparation and characterization of peroxo-metal compounds and studies on their biological significance in cellular signaling [Collaboration with Centre for DNA Finger Printing and Diagnostics (CDFD), Hyderabad]	DBT	70.50 lakhs	3 years	N S Islam
Preparation and Studies on Polymer Anchored Transition Metal Compounds. Towards Development of Bio-relevant Complexes and Active Oxidation Catalysts	DST	20.80 lakhs	3 years	N S Islam
Development of natural polymeric system for controlled delivery of Anticancer agents	CSIR	10.92 lakhs	3 years	T K Maji
Development of Bio Nano Composite for removal of contaminants from water	DRL	9.57 lakhs	3 years	T K Maji
Hyperbranched Epoxy Nanohybrids Immobilized Natural Biocide for Advanced Marine Coating	NRB	38 lakhs	3 years	N Karak
Development of multifunctional dendritic polymers for injectable bone tissue engineering	DBT	101.32 lakhs	3 years	N. Karak
Studies on green polymeric nanocomposites for development of insect repellent formulations.	DRL	9.55 lakhs	3 years	N Karak
Magnetic nanoparticles decorated biodegradable polyurethane MWCNT nanocomposites as shape	DST	38.00 lakhs	3 years	N Karak

memory material				
Investigation of one pot synthesis of acridine derivatives using greener approach	CSIR	17.00 lakhs	3 years	R Borah
Synthesis, characterization and application of novel solid base green catalysts for nucleophilic addition reactions	DST	30.30 lakhs	3 Years	R C Deka
Computational Studies of Bare and Zeolite-Supported Metal Nanoclusters and their Application in Catalysis	DST	53.00 lakhs	3 Years	R C Deka
UKIERI (UK India Education and Research Initiative) Project.	UGC	30.00 lakhs	3 Years	R C Deka

PUBLICATIONS

In International and National Journals

- Baishya, S. and R C Deka. 2013. An Insight into CO oxidation over zeolite supported gold monomer: DFT/MM Approach. *Chem. Phys. Lett.* (in press).
- Baishya, S. and R C Deka. 2013. Exploring structures, electronic and reactivity properties of Au_nH_n ($n=1-12$) clusters: ADFT approach. *Comput. Theor. Chem.* (in press).
- Bania, Kusum K. and R C Deka. 2012. Experimental and theoretical evidence for encapsulation and tethering of 1,10-Phenanthroline Complexes of Fe, Cu and Zn in Zeolite-Y. *J. Phys. Chem. C*, 116.
- Bania, Kusum K., D Bharali, B Viswanathan and R C Deka. 2012. Enhanced catalytic activity of zeolite encapsulated Fe(iii) schiff base complex for oxidative coupling of 2-Napthol. *Inorganic Chemistry*, 51.
- Banik, N., A Hussain, A Ramteke, H K Sharma and T K Maji. 2012. Preparation and evaluation of the effect of particle size on the properties of chitosan-montmorillonite nanoparticles loaded with Isoniazid. *RSC Adv.*, 2.
- Barua, N., P Sarmah, I Hussain, R C Deka and A K Buragohain. 2012. DFT-based QSAR Models to predict the antimycobacterial activity of chalcones. *Chemical Biology & Drug Design*, 79.
- Barua, S., R Konwarh, M Mandal, R Gopalakrishnan, D Kumar and N Karak. 2013. Biomimetically prepared antibacterial, free radical scavenging poly (ethylene glycol) supported silver nanoparticles as aedesalbopictuslarvicidal agent. *Adv. Sci. Eng. Medi.*, 5.
- Barua, S., R Konwarh, S S Bhattacharya, P Das, Sanjana P Devi, T K Maiti, M Mandal and N Karak. 2013. Non-hazardous anticancerous and antibacterial colloidal 'green' silver nanoparticles. *Colloids and Surfaces B: Biointerfaces*, 105.
- Bharali, P., G Thrimurthulu, L Katta and B M Reddy. 2012. Preparation of highly dispersed and thermally stable nonosized cerium-hafnium solid solutions over silica surface: structural and catalytic evaluation. *J. Industrial and Engineering Chemistry*, 18.
- Bharali, P., P Saikia and B M Reddy. 2012. Large-scale synthesis of ceria-based nano-oxides with high CO oxidation activity. *Catalysis Science & Technology*, 2.
- Bharali, P., P Saikia, L Katta and B M Reddy. 2013. Enhancement in CO oxidation activity of nanosized $CexZr1-xO2$ solid solutions by incorporation of additional dopants. *J. Indust. Eng. Chem.*, 19.
- Bora, C., A Kalita, D Das and S K Dolui. 2013. Preparation of Polypyrrole/NiO nanocomposites by interfacial polymerization and their electrical, electrochemical and magnetic property. *Polymer International* (in press).
- Bora, C., P Gogoi, S Baglari and S K Dolui. 2013. Preparation of polyester resin/ graphene oxide nanocomposite with improved mechanical strength. *J. Appl. Polym. Sci.* (in press).
- Bordoloi, S., M Nath and R K Dutta. 2013. Ph-conditioning for simultaneous removal of arsenic and iron ions from groundwater. *Process Safety and Environmental Protection* (in press).
- Boruah, B., P M Saikia and R K Dutta. 2012. Binding and stabilization of curcumin by mixed chitosan-surfactant systems: A spectroscopic study. *J. Photochemistry and Photobiology A: Chemistry*, 245.
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Workshop attended

- B C Sarma participated in the International conference, Chemistry: Synthesis, Structure and Dynamics. A Conference on Crystal Engineering, Coorg, Karnataka, 11-14 December, 2012.
- B C Sarma participated in the Symposium, National Magnetic Resonance Society Symposium (NMRS-2013), IIT Bombay, Mumbai, 03-06 February, 2013.
- B C Sarma presented a paper, Monolayer for Polymorph Screening and Organic Nanocrystals, in the international conference, The Indo-US bilateral meeting on the evolving role of solid state chemistry in Pharmaceutical Science, Manesar, New Delhi, 2-4 February, 2012.
- B Das participated in the Indo-Finnish symposium, Green Chemistry, organised by the Department of Energy, Tezpur University under the joint Indo-Finnish research project sponsored by Department of Science & Technology, India and Academy of Finland, Finland, Tezpur University, Tezpur, Tezpur, 1 February, 2013.
- N Gogoi participated in the workshop, CFM2012: Chemical Frontiers, organized by the IIT Bombay, Mumbai and JNCASR, Bangalore, Goa, 14-16 August, 2012.
- N Gogoi participated in the workshop, Chemistry Popularization, organized by Dept. of Chemical Sciences, Tezpur University and Association of Chemistry Teachers at Tezpur University, Tezpur University, Tezpur, Tezpur, 31 October, 2012.
- N Gogoi participated in the Young Scientist Research Award Meeting organized by Board of Research for Nuclear Sciences, BARC, Mumbai, Mumbai, 25-28 November, 2012.
- N Karak participated in the XXXI Annual Conference ICC, Saurashtra University, Rajkot, Rajkot, 26-27 December, 2012.
- N S Islam participated in the 15th RSC-CRSI symposium, organized by the Department of Chemistry, Banaras Hindu University, 31 January-3 February, 2012.
- P Bharali participated in the 21st National symposium, Catalysis, organised by the CSIR-IIT, Hyderabad, Hyderabad, 10-13 February, 2013.
- P Puzari participated in the National workshop, Advances in Microbiology and Bioprocess Engineering, organized by ONGC centre for Petroleum Biotechnology, Department of MBBT, Tezpur University, Tezpur, Tezpur, 23-24 August, 2012.
- P Puzari participated in the one day workshop, Capturing innovations for IPR protection in Tezpur University, organized by IPR Cell, Tezpur University, Tezpur, Tezpur, 8 August, 2012.
- P Puzari participated in the International Conference, Electronic Structure and Dynamics of Molecules and Clusters (ESDMC-2013), organized by the Indian Association for the Cultivation of Science, Kolkata, Kolkata, 17 - 21 February, 2013.
- P Puzari participated in the international symposium, Theoretical Chemistry (TCS- 2012), organised by IIT Guwahati, Guwahati, 19-21 December, 2012.

P Puzari participated in the two days online workshop, Akash for Education, organized by the Department of ECE, Tezpur University and conducted by IIT Bombay, Tezpur, 10-11 November, 2012.

S Barua participated in the 100th Indian Science Congress, Kolkata, 3-7 January, 2013.

S Barua participated in the Indo-Finnish symposium, Green Chemistry, organised by the Department of Energy, Tezpur University under the joint Indo-Finnish research project sponsored by Department of Science & Technology, India and Academy of Finland, Finland, Tezpur University, Tezpur, Tezpur, 1 February, 2013.

S Gogoi participated in the Indo-Finnish symposium, Green Chemistry, organised by the Department of Energy, Tezpur University under the joint Indo-Finnish research project sponsored by Department of Science & Technology, India and Academy of Finland, Finland, Tezpur University, Tezpur, Tezpur, 1 February, 2013.

S Pramanik participated in the Indo-Finnish symposium, Green Chemistry, organised by the Department of Energy, Tezpur University under the joint Indo-Finnish research project sponsored by Department of Science & Technology, India and Academy of Finland, Finland, Tezpur University, Tezpur, Tezpur, 1 February, 2013.

S Thakur participated in the Indo-Finnish symposium, Green Chemistry, organised by the Department of Energy, Tezpur University under the joint Indo-Finnish research project sponsored by Department of Science & Technology, India and Academy of Finland, Finland, Tezpur University, Tezpur, Tezpur, 1 February, 2013.

Other publications

BOOKS

Reddy, B M., G Thrimurthulu and P Bharali. 2012. *Catalytic Regulation and Utilization of Greenhouse Gases*. In Ahmed, El Nemr. *Environmental Pollution and Its Relation to Climate Change*. New York: Nova Science Publishers.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- One-day workshop, Chemistry Popularisation, sponsored by Association of Chemistry Teachers, Mumbai, 31 October, 2012.
- One-day workshop, Spectroscopic Tools and their Application, sponsored by Chemical Society and Tezpur University, 6 April, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

A J Thakur delivered the invited talk, Reactions inside molecular flasks, for the National seminar on Recent challenges for chemical research and practices (RCCRP), Darrang College, Tezpur, 10 November, 2012.

A K Phukan delivered the invited talk in the Theoretical Chemistry Symposium-2012, organized by IIT Guwahati, 19-22 December, 2012.

B Sarma delivered the invited talk, Self-Assembled Monolayers for Polymorph Screening and Organic Nanocrystals, in the National Seminar on Recent Advances in Chemistry, Gauhati University, Guwahati, 30-31 March, 2012.

K K Bania delivered the invited talk at Indo-Finnish Symposium on Green Chemistry, Dept. of Energy, Tezpur University 01 February, 2013.

N Gogoi delivered the invited talk, Geometry mediated enhancement of single ion anisotropy: Building blocks for rational assembly of nano-magnets at the Department of Chemistry IIT Bombay, 16 July 2012.

N Karak delivered the invited talk, Can you live without Polymers-in the present days, for the Inspire program of DST, 2012.

N Karak delivered the invited talk, Polymer nanocomposites and their multifaceted applications, NEIST, Itanagar, 2012 (award lecture).

N Karak delivered the invited talk, Renewable resource based hyperbranched polyurethane nanocomposites-prospects and challenges, Asian Paints (I) Ltd., Mumbai, 2012.

N Karak delivered the invited talk, Vegetable oil and petroleum based conventional and hyperbranched polyester and epoxy nanocomposites for surface coating applications, Asian Paints (I) Ltd., Mumbai, 2012.

N Karak delivered the invited talk, Vegetable oil modified polymer nanocomposites and their advanced applications, for the XXXI annual conference ICC, Saurashtra University, Rajkot, 2012 (award lecture).

N S Islam delivered the invited talk at the Department of Biochemistry, IISc-Bangalore during Pls meeting of DBT project, 28 December, 2012.

N S Islam delivered the invited talk, Inorganic Chemistry at the interface, for the symposium Department of Chemistry, IIT, Kharagpur, during Oct 12-13, 2012

P Bharali delivered the invited talk, Catalyst design for emission control and fuel cell application, for the Indo-Finnish Symposium on Green Chemistry, Dept. of Energy, Tezpur University, 01 February, 2013.

R K Dutta delivered the invited talk, Drinking water quality parameter w.r.t. fluoride, for the National Conference on Hydrology and Water Quality Management, Morigaon College, Morigaon, Assam, 20-22 September, 2012.

S K Dolui delivered the Dr. Soumendra Nath Mukharjee memorial talk, Human civilization and Material Development Process, Cotton College, Guwahati, 24 January, 2013.

S K Dolui delivered the invited talk, Polymer-supported Ziegler-Natta catalyst for olefin polymerization, North Bengal University, Siliguri, West Bengal, 2 November, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Dr A Sahu, IIT Gauhati, Guwahati

Dr B K Gupta, Reliance Petrochemicals Ltd

Prof D C Deka, Gauhati University, Guwahati

Prof D S Pandey, Banaras Hindu University, Varanasi

Prof L F Tietze, Germany

Prof N N Dass, IASST, Guwahati

Prof P S Kalsi, Punjab

Prof S Bhattacharya, IISc, Bangalore

Prof S K Ghosh, BARC, Mumbai

Prof T R Bhardwaj, Punjab University, Chandigarh

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

S K Dolui

- Received National Technology Innovation Award, 2012 from Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizer for R & D work in the field of Polymer Science and Technology.
- Appointed as editor, J. of Polymer Materials.

N Karak

- Received Dr. Arvind Kumar Memorial Award by Indian Council of Chemists (ICC), 2012
- Received Dr. J. N. Baruah Memorial Science Award, in Chemical Science by JNBMT & Assam Science Society, 2012
- Received 3rd National Award for Technology Innovation in Petrochemicals and Downstream Plastic Processing Industry by Ministry of Chemicals and Fertilizer, Govt. of India, 2013

R C Deka

- Received Bronze Medal, Chemical Research Society of India (CRSI), 2013.
- Received Professor H. C. Goswami award by Assam Science Society, 2013.

AWARDS/HONOURS RECEIVED BY STUDENTS

Dr Isha R Kamrupi received the National Technology Innovation Award, 2012 from Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizer for R & D work in the field of polymer science and technology.

Ms Sandhya Rani Gogoi received the RSC poster award in 15th CRSI symposium held at BHU, Varanasi, February 2013

Ms Chandramika Bora received the best paper presentation award in National Seminar on 'Recent Advances in Polymer Science and Technology' (Poly-2012) held at North Bengal University, West Bengal.

Ms Shyamalima Sarma received the best paper presentation award in National Seminar on 'Recent Advances in Polymer Science and Technology' (Poly-2012) held at North Bengal University, West Bengal.

Mr Bhaskar Jyoti Saikia Bora received the best paper presentation award in "National Seminar on 'Recent Advances in Polymer Science and Technology' (Poly-2012) held at North Bengal University, West Bengal.

Mr Parag Choudhury, Mr Achyut Konwar and Mr Mandip Sarma jointly received the 2nd prize in the essay competition on *Intumescent Surface Coating* organized by Asian Paints Ltd. Mumbai

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- NET: 04
- SLET: 03
- GATE: 15

THE FACULTY OF THE DEPARTMENT**Professors**

S K Dolui, MSc (Calcutta), PhD (IIT Kharagpur)
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N Karak, MTech, PhD (IIT Kharagpur)
Head of the Department
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R C Deka, MSc (Gauhati), PhD (NCL)
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Associate Professors

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Specialization/Areas of interest: Inorganic Chemistry
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Assistant Professors

P Puzari, MSc (Dibrugarh), PhD (IIT Guwahati)
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Assistant Professor (adhoc)

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Inspire Faculty

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*School of Sciences***DEPARTMENT OF ENVIRONMENTAL SCIENCE****THE DEPARTMENT**

The Department of Environmental Science was established in January 2004 with the objective of imparting education on regional and global environmental issues. The Department offers two academic programmes, MSc and PhD in Environmental Science. The curricula for MSc and PhD programmes focus on all-important aspects of Environmental Science, covering contemporary problems of nature conservation and environmental quality. Keeping in view the unique physiographic and agro-climatic settings of the North East as a whole and Assam in particular, the Department has been giving emphasis in teaching and research on various aspects of agro-ecosystem and hill ecosystems of North East India.

ACADEMIC PROGRAMMES

- MSc in Environmental Science
- PhD in Environmental Science

STUDENT INTAKE

Programme	Student Intake
MSc in Environmental Science	30
PhD in Environmental Science	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- ICP-Perkin Elmer
- Ion Chromatograph
- TOC Analyzer
- Continuous Air Pollution Monitoring Station
- Gas Chromatograph with ECD& FID Detector-Varian CP-3800
- Gas Chromatograph with ECD& FID Detector-Perkin Elmer, Clarus 500
- Portable Photosynthesis System-LI-6400F
- Laser Leaf Area Meter with Root Measurement Attachment - CI-203, CI203RL
- Electronic Semi Micro Balance-CP-225D
- High Speed Refrigerated Centrifuge-Sigma 2-16 K
- Ion Meter-Orion 4 star portable PH/ISE meter)
- HOBO Pro V₂ Tea/RH Data Logger- U23-001 S/N 1276464 to 1276471
- Respirable Dust Sampler with Gaseous Sampling Attachment- APM 460 BL
- UV-Visible Spectrophotometer-Shimadzu, UV-1700
- pH Meter - Systronics/362
- Electrophoresis Gel Unit-Atto/EP KITS
- Flame Photometer-Ellico/CL 22D
- Nephelometer- Ellico/CL 52D
- Trinocular Microscope with Camera & Software
- Sartorius Ultra Pure Water Purification System
- Sartorius RO System
- REMI Centrifuge
- DENVER Analytical Balance
- Digital Pocket Weather Station
- Arc GIS Software
- ERDAS Software

RESEARCH PROJECTS: ONGOING AND NEW

Project Titles	Funding Agency	Amount in INR	Duration	Principal Investigator
Exploration of native flora and in-vitro study to assess their efficiency in removal of water pollutant	DST	12.47 lakhs	3 Years	K P Sarma
Spatial distribution and source apportionment of PAH s in drinking water and soil of surrounding areas of oil fields of Borhola area of Jorhat	ONGC	6.35 lakhs	1 Year	K P Sarma
Impact of Climate change with reference to low rainfall on sustainable productivity of pulse crops in Assam	UGC	8.943 lakhs	3 years	Nirmali Gogoi
Physiochemical characterization of aerosol and source apportionment in mid Brahmaputra plain in Assam; A modeling approach.	Ministry of Earth Sciences, GOI	69.7 lakhs	3 Years	R R Hoque
Sustainable utilization of solid waste as a source of plant nutrient in rice based agroecosystem of North East India	CSIR	14.80 lakhs	3 Years	S S Bhattacharya
Evaluation of Carbon Sequestration and enhancing carbon sinks in rice based agro-ecosystems of Assam	DST	62.42751 lakhs	3 Years	K K Baruah
Hydro-Geochemical Investigation of arsenic-contaminated alluvial aquifers of India through multilayer Sampling and evaluations of Applicable Remediation Technique.	DST Fast Track Scheme for Young Scientists	23.65 lakhs	3 Years	Manish Kumar
Tracing source and distribution of heavy metals in the sediment and water of the Brahmaputra River through coupling of speciation and isotopic fingerprinting	UGC Major Research Project	10.6 lakhs	3 Years	Manish Kumar
Exploration, utilization, conservation and documentation of Allium species in northeastern India	UGC Major Research Project	10.89 lakhs	3 Years	Ashalata Devi
Distribution and enrichment of heavy metals among sediments, water and aquatic plants and modeling of ecological impact on wetland ecosystem of the Brahmaputra valley	UGC	8.32 lakhs	3 Years	K P Sarma
Soil plant atmospheric study in relation to the CO ₂ flux from terrestrial ecosystem of Assam	Ministry of Earth Science, GOI	54.89 lakhs	3 Years	K K Baruah
Qualitative development of vermicompost technology through isolation of novel microorganisms and their application in agricultural waste management of Assam	DBT	68.84 lakhs	3 Years	S S Bhattacharya

PUBLICATIONS**In International and National Journals**

Baroowa, Bhaswatee and Nirmali Gogoi. 2012. Effect of induced drought on different growth and biochemical attributes of black gram (*Vigna mungo* L) and green gram (*Vigna radiate* L.). *Journal of Environmental Research and Development*, 6(3A).

Baruah, K K., Bobby Gogoi, Leena Borah, manoshi Gogoi, R Boruah. 2012. Plant morphophysiological and anatomical factors associated with nitrous oxide flux from wheat (*Triticum aestivum*). *Journal of Plant Research*, DOI: 10.1007/s10265-011-0464-4.

- Baruah, Sangita, Kalyan Hazarika, and K P Sarma. 2012. ***Uptake and localization of Lead in Eichhornia crassipes grown within a hydroponic system***. *Advances in Applied Science Research*, 3(1).
- Bhattacharya, S S., W Iftikar, B. Sahariah, and G N Chattopadhyay. 2012. Vermicomposting converts fly ash to enrich soil fertility and sustain crop growth in red and lateritic soils. *Resources, Conservation and Recycling*, 65.
- Das, Apurba Kumar, R K Sah, and N Hazarika. 2012. Bankline change and the facets of riverine hazards in the floodplain of Subansiri–Ranganadi Doab, Brahmaputra Valley, India. *Nat Hazards*, DOI 10.1007/s11069-012-0283-5.
- Devi, Ashalata and Mrigakhi Borah. 2012. Effect of heavy metals on *Pisum sativum* Linn. *International Journal of Advanced Biological Research*, 2(2).
- Gogoi, Bobby and K K Baruah. 2012. Nitrous oxide emissions from fields with different wheat and rice varieties. *Pedosphere*, 22(1).
- Hoque, R R., D K Sarma, and D Deka. 2012. Studies on the siltation and chemical contamination in the wetlands of Kaziranga National Park. *Journal of Ecotoxicol. Environ. Monit.*, 22(3).
- Tripathy, P K., M Kumar, Parijat Saikia, and A L Ramanathan. 2012. Arsenic poisoning of groundwater in parts of Middle Gangetic Plain, Bhagalpur district, Bihar, India. *Indian Society of Applied Geochemists*.
- Paul, Sreyashi and S S Bhattacharya. 2012. Vermicomposted water hyacinth enhances growth and yield of marigold by improving nutrient availability in soils of north bank plain of Assam. *Research & Reviews: Journal of Agricultural Science & Technology*, 2(1).
- Saikia, T., and K K Baruah. 2012. Iron toxicity tolerance in rice and its association with antioxidative enzyme activity. *Crop Science*, 3.

Conference proceedings

Baruah, K K., Bobby Gogoi, Bobby Leena Borah. Climate change, plant mediated green house gas, nitrous oxide emission from wheat agriculture. In Proceedings of the 99th Indian Science Congress Association, ISCA-2012, Bhubaneswar, 2012.

Other publications

Books

Kumar, Manish (ed). 2012. *Problems, Perspectives and Challenges of Agricultural Water Management*. Croatia: In-Tech International Publication.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- K K Baruah presented a paper, N₂O mitigation, in the 12th IGAC Open Science Conference, Beijing, China, 17-21 September, 2012.
- K K Baruah presented an invited paper, Physiological and molecular approaches for development of resilient crops in the national seminar, Physiological and Molecular Approaches for Development of Climate Resilient Crops, ANR Agriculture University, Hyderabad, 12-14 December, 2012.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof D C Upreti, FNASc, Division of Plant Physiology, New Delhi
Dr M Someshwar Rao, Scientist E, National Institute of Hydrology, Roorkee

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

Nabojit Hazarika, Pallavi Das, Aparna Das, Jeenu Deka (all students) received Rajiv Gandhi National Fellowship.

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE (2012-2013)

- NET: 16

THE FACULTY OF THE DEPARTMENT

Professors

K K Baruah, PhD (PAU)

Post Doctorate in Environmental Plant Science (Moscow), FISPP

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K P Sarma, PhD (NEHU)

Specialization/Areas of interest: Environmental Chemistry

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Associate Professors

R R Hoque, PhD (JNU)

Head of the Department

Specialization/Areas of interest: Environmental Monitoring and Assessment, aerosol/VOC-ozone-NO_x chemistry

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A K Das, PhD (JNU)

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Assistant Professors

Ashalata Devi, PhD (NEHU)

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Satya Sundar Bhattacharya, PhD (Visva Bharati)

Specialization/Areas of interest: Vermi Culture, Plant Nutrition and Soil Fertility Management

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Manish Kumar, PhD (Tokyo)

Specialization/Areas of interest: Hydrogeochemical Process, Ground Water Modelling

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Ms. Sumi Handique, MSc (JNU)

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Amit Prakash, PhD (JNU)

Specialization/Areas of interest: Atmospheric Processes, Air and Noise Pollution Monitoring and Modelling, Environmental System modelling, Urban Climate

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Sudip Mitra, PhD (IARI)

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*School of Sciences***DEPARTMENT OF MATHEMATICAL SCIENCES****THE DEPARTMENT**

The Department of Mathematical Sciences was opened in July 1994 with the objective of producing trained manpower capable of undertaking research and teaching in Mathematics and allied branches. It also aims at grooming trained mathematicians for problem solving in industry and other concerns. The 2-year MA/MSc programme in Mathematics and the PhD programme in Mathematical Sciences have been running in the Department since 1994. A 5-year Integrated MSc programme in Mathematics was started in August 2009, followed by an integrated BSc/BEd programme in Mathematics in 2011. A 2-year MSc programme in Mathematics is also being offered in the Distance Education mode under Centre for Open and Distance Learning of the University since 2012. The Department has a plan to introduce a 2-year MSc in Statistics in the XII plan period. Apart from the programmes offered by the Department, the department also caters to the teaching of Mathematics of the various BTech programmes of the university. Faculty members of the Department have been supervising doctoral research in the areas of Discrete Probability Distributions; Genetic Algorithms; Combinatorial Optimization; Number Theory and Mathematics influenced by the work of Ramanujan; Algebraic number theory, Fuzzy Mathematics; Topology and its Applications; Operator Theory and Applications; Finite Element Method, Ring Theory and Graph Theory. They have in the meantime successfully completed several research projects sponsored by DST, ISRO, CSIR, UGC, ICSSR, and DRDO. Currently the Department is working on several other UGC and DST sponsored projects. The Department is being supported under UGC-SAP (Phase-I) since 2011. The department has been recommended for grant under DST-FIST programme in 2012 for a period of five years.

ACADEMIC PROGRAMMES

- 5-year Integrated MSc in Mathematics
- 4-year Integrated BSc BEd in Mathematics
- MA/MSc in Mathematics
- PhD in Mathematical Sciences
- MSc Mathematics in Distance Education mode

STUDENT INTAKE

Programme	Student Intake
Integrated MSc in Mathematics	15
Integrated BSc BEd in Mathematics	10
MA/MSc in Mathematics	60
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

A computational laboratory was set up in the Department in 2005 with partial assistance from the Department of Science and Technology of the University. The laboratory is equipped with 2 high performance servers, 2 workstations and PCs. It has the latest scientific and mathematical software packages which includes Matlab, Mathematica, TechPlot, SPSS, SEISAN, FORTRAN, C, C++ compilers. The laboratory is fully networked, and is linked to the central computer center of the University via LAN, and has access to the Internet. . One Systems Analyst with the help of a technical assistant looks after the laboratory.

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

- A new class of finite groups having asymptotic commutativity degree $1/4$ is constructed by R K Nath (the results are to appear in the Bull. of Australian Mathematical Soc.)
- Large number of Infinite families of arithmetic identities for t -cores have been found by N D Baruah and K Nath.
- Results for trace of Frobenius endomorphism of elliptic curves in terms of Gaussian hypergeometric functions are obtained by R. Barman and G. Kalita (the results are to appear in the Journal of Number Theory and Proc. of the AMS). They have also expressed the number of distinct zeros of certain families of polynomial equations of degree n over finite fields in terms of $(n+1)_F_n$ hypergeometric functions for any $n > 2$ which gives a solution of an open problem posed by Professor Ken Ono (to appear in the Int. Journal of Number Theory).
- Convergence of finite element solution to the exact solution of linear wave equation with discontinuous coefficients are established by B Deka and T Ahmed (to appear in Numerical Methods for PDE). Similar results are also derived for parabolic equations with memory by B. Deka and R. C. Deka (to appear in *Ind. J. Pure. Applied. Math.*).

RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount in INR	Duration	Principal Investigator
A study of k-hyponormality and weak k-hyponormality for finite rank perturbation of weighted shift operators	UGC	1,75,000.00	1 yaer	M Hazarika
Bi-harmonic formulation of incompressible viscous fluid and its numerical simulation by higher order compact schemes	UGC	1,20,000.00	2 years	S Sen
Smooth Bootstrap estimation of various measures of accuracy and bandwidth selection for kernel density estimators	UGC	1,11,000,00	2 years	S Dutta

PUBLICATIONS**In International and National Journals**

- Barman R., and A Saikia. 2012. Iwasawa lambda invariants of p -adic measures on $(\mathbb{Z}_p)^n$ and their Γ -transforms. *J. Number Theory*, 132(10).
- Barman, R. Another look at Iwasawa lambda invariants of p -adic measures on $(\mathbb{Z}_p)^n$ and their Gamma transform. *Int. J. Number Theory*, (accepted).
- Barman, R., and G Kalita. 2012. Certain values of Gaussian hypergeometric series and a family of algebraic curves, *Int. J. Number Theory*, 8(4).
- Barman, R., and G Kalita. 2012. Hypergeometric functions and a family of algebraic curves. *The Ramanujan Journal*, 28(2).
- Barman, R., and G Kalita. Elliptic curves and special values of Gaussian hypergeometric functions. *J. Number Theory*, (accepted).
- Barman, R., and G Kalita. Hypergeometric functions over F_q and traces of Frobenius for elliptic curves. *Proc. Amer. Math. Soc.* (accepted).
- Barman, R., and G Kalita. On the polynomial x^d+ax+b over F_q and Gaussian hypergeometric functions. *Int. J. Number Theory*, (accepted).
- Baruah, N. D., and B Baruah. 2012. Two theta function identities of Ramanujan and representation of a number as a sum of three squares and as a sum of three triangular numbers. *Integers*, 12.

- Baruah, N. D., and K Nath. 2013. Some results on 3-cores. *Proceedings of the AMS*, (accepted).
- Baruah, N. D., and K Nath. 2013. Infinite families of arithmetic identities for 4-cores, *Bulletin of the Australian Mathematical Society*, 87.
- Baruah, N. D., and K K Ojah. 2012. Analogues of Ramanujan's partition identities and congruences arising from his theta functions and modular equations. *The Ramanujan Journal*, 28.
- Baruah, N. D., and B K Sarmah. 2012. Identities for self-conjugate 7- and 9-core partitions. *International Journal of Number Theory*, 8.
- Baruah, N. D., and B K Sarmah. 2012. The number of representations of a number as sums of various polygonal numbers. *Integers*, 54.
- Baruah, N. D., J Bora, and K K Ojah. 2012. Ramanujan's modular equations of degree 5, *Proceedings of the Indian Academy of Science*, 122.
- Borah, M., C Duloi, and J Gogoi. 2013. Cascade System with $P(X < Y < Z)$, *Journal of Informatics and Mathematical Sciences*, 5(1).
- Choudhury, A., and P Medhi. 2013. Customers Impatience in a Service facility with limited waiting space. *International Journal Mathematics in Operational Research*, 5(3).
- Choudhury, A., and P Medhi. 2013. Performance Evaluation of a Finite Buffer System with Varying Rates of Impatience. *Journal of Turkish Statistical Association*. 6(1).
- Das, A K., and R K Nath. 2012. A generalization of commutativity degree of finite groups. *Comm. Algebra*, 40(6).
- Deka B., and R C Deka. Finite Element Method for a class of Parabolic Integro-Differential Equations with Interfaces. *Ind. J. Pure. and Appl. Math.*, (accepted).
- Deka B., and R K Sinha. 2012. Finite element methods for second order linear hyperbolic interface problems. *Applied Mathematics and Computation*, 218.
- Deka, B., and T Ahmed. 2013. Convergence of Finite Element Method for Linear Second order Wave Equations with Discontinuous Coefficients. *Numer.* (accepted).
- Deka, B., and T Ahmed. 2012. Semidiscrete finite element methods for linear and semilinear parabolic problems with smooth interfaces: some new optimal error estimates. *Numer. Funct. Anal. Optim.*, 33(issue no).
- Haloi, R. 2013. On solutions to a non-autonomous neutral differential equation with deviating arguments. *Nonlinear Dynamics and Systems Theory*, (accepted).
- Haloi, R. 2012. Existence of Weighted Pseudo-almost Automorphic Mild Solutions to Non-autonomous Abstract Neutral Differential Equations with Deviating Arguments, *Differential Equation and Dynamical systems*, (accepted).
- Haloi, R., D N Pandey, and D Bahuguna. 2012. Existence, uniqueness and asymptotic stability of solutions to non-autonomous semilinear differential equations with deviated arguments. *Nonlinear Dynamics and Systems Theory*, 12 (2).
- Hazarika, D., and D Hazarika. 2012. Fuzzy boundaries and their generalizations. *Journal of Fuzzy Mathematics*, 20(3).
- Hazarika, D., and D Hazarika. 2012. Topological Relations between fuzzy regions with holes in a general fuzzy topological space, *Journal of Informatics and Mathematical Sciences*, 4(2).
- Hazarika, M., and B Kalita. 2013. Finite rank perturbation of 2-hyponormal weighted shifts, *International Journal of Functional Analysis, Operator Theory and Applications*, 5(1).
- Hazarika, M., and A Phukan. 2013. Necessary Conditions for hyponormality of Toeplitz Operators on the Bergman space. *International Journal of Mathematical Analysis*, 7(4).
- Kalita, D. Spectral integral variation and unicyclic 3-colored digraphs with second smallest eigenvalue 1. *Linear Algebra and its Applications*, 439.
- Kalita, J.C., and S Sen. 2012. The biharmonic approach for unsteady flow past an impulsively started circular cylinder. *Communications in Computational Physics*, 12.
- Kalita, J.C., and S Sen. 2012. Triggering asymmetry for flow past circular cylinder at low Reynolds numbers. *Computers and Fluids*, 59.
- Nath, M. 2013. Minimal configuration bicyclic graphs. *Linear and Multilinear Algebra*, 61.
- Nath, M., and S Paul. On the distance spectral radius of trees. *Linear & Multilinear Algebra*, (accepted).
- Nath, M., and S Paul. Graph transformations and distance spectral radius, *Discrete Mathematics. Algorithms and Applications*, (accepted).
- Nath, M., and S Paul. On the minimal distance spectral radius in a class of bicyclic graphs, *Discrete Mathematics. Algorithms and Applications*, (accepted).

- Nath, M., S Bose, and S Paul. 2013. On maximal distance spectral radius of graphs without a pendent vertex. *Linear Algebra and its Applications*, 438.
- Sen, S., J C Kalita, and M M Gupta. A robust implicit compact scheme for two-dimensional unsteady flows with a biharmonic stream function formulation. *Computers and Fluids*, (accepted).

Other publications

- Kalita, D. 2013. Determinant of the laplacian matrix of weighted directed graphs, In Bapat, R B., et al (eds). *Combinatorial Matrix Theory and Generalized inverses of Matrices*. Springer India.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- R Haloi attended the 2-week Summer School, Instructional School for Lecturers: Differential Equations and Computations, organized by Jaypee University of Information Technology, Solan, HP, 4-16 June, 2012.
- D Hazarika attended the workshop, Workshop for IQAC Co-ordinators of Universities, organized by NAAC, Bangalore, Bangalore, 4-5 July, 2012.
- R Barman attended the workshop, Workshop on Bloch-Kato Conjectures, organized by International Center for Theoretical Sciences (ICTS), Pune, Pune, 17-21 July, 2012.
- R Barman attended Pan Asian Number Theory Conference, organized by International Center for Theoretical Sciences (ICTS), Pune, Pune, 23-27 July, 2012.
- B K Sarmah, and R Barman attended the conference, The legacy of Srinivasa Ramanujan, organized by organizer, place, 17-22 December, 2012.
- D Kalita attended the conference, Matrices and operators- conference in honour of 60th birthday of Rajendra Bhatia, organized by the Department of Mathematics, IISc, Bangalore, Bangalore, 27-30 December, 2012.
- P Medhi, and S Dutta attended the conference, International Conference on Recent Advances in Mathematical Statistics and Its Applications in Applied Sciences, organized by Gauhati University, Guwahati, Guwahati, Dec 31, 2012- 2 January, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

- D K Basnet was invited as the resource person in the MTTTS program (Level-0) of the National Board for Higher Mathematics at IIT Guwahati, 14-26 May, 2012.
- N D Baruah delivered the talk, An Inspiring Story of the Genius and the King in a DST sponsored INSPIRE Programme, organized by Tezpur University, Tezpur, 14 June, 2012.
- N D Baruah delivered the talk, Ramanujan and Pi at Royal School of Engineering and Technology, Guwahati, 20 July, 2012.
- N D Baruah delivered the talk, Numbers, Pi and Ramanujan for the Golden Jubilee Celebration of Dibru College, Dibrugarh, 22 September, 2012.
- N D Baruah delivered the talk, Ramanujan's Modular Equations and Theta Functions with Applications to Partitions at Indian Statistical Institute (ISI), Delhi Centre, New Delhi, 17 October, 2012.

N D Baruah delivered the talk, Ramanujan and Pi at Shri Ram School, Gurgaon, 17 October, 2012.

N D Baruah delivered the talk, Ramanujan and Pi, in the workshop, Science Academies Lecture Workshop in Celebration of the National Mathematics Year-2012, organized by Jamia Milia Islamia, New Delhi, 18 October, 2012.

N D Baruah delivered the talk, The Legacy of Srinivasa Ramanujan - International Conference to celebrate the 125th Birth Anniversary of Ramanujan at University of Delhi, New Delhi, 17-22 December, 2012.

D Hazarika delivered the talk, On some recent applications of topology, at the 78th Annual Conference of the Indian Mathematical Society, organized by BHU, Varanasi, 22-25 January, 2013.

D Hazarika delivered the talk, Topology to Fuzzy Topology, theory and applications, in the workshop, Workshop on Recent Trends in Mathematical Sciences, organized by Bodoland University, Kokrajhar, 18-24 February, 2013.

M Hazarika, B Deka and R Barman were invited as a resource person for the UGC Sponsored Refresher Course on Mathematics, NEHU, Shillong, 22 March to 11 April, 2012.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- Winter School, Galois Theory, sponsored by NBHM, 12-15 December, 2012.
- Workshop, Undergraduate Algebra, Analysis and Applications for NE, jointly organized with ISI, Tezpur, 28 March-3 April, 2013.

AWARDS/HONOURS RECEIVED BY THE FACULTY/STUDENTS/RESEARCH SCHOLARS/THE DEPARTMENT

R Barman, nominated for the INDO-AUS Fellowship, 2013.

Ms Tarun Kumari, Research Scholar, selected for the Jawaharlal Nehru Scholarship for Doctoral Studies, 2013.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof A Goswami, ISI, Kolkata

Prof A K Pani, Institute Chair Professor, IIT, Bombay

Prof B K Sinha, ISI, Kolkata

Prof Dilip P Patil, IISc Bangalore.

Prof Khalil Ahmad, Jamia Milia Islamia, New Delhi

Prof M C Joshi, IIT Bombay

Prof S C Arora, University of Delhi

Prof S C Malik, M. D. University, Rohtak

Prof S P Mukherjee, University of Calcutta

Prof Swadhinanda Patnayak, Ex-Director, Institute of Mathematics and Applications, Bhubaneswar

Prof V K Bhatia, National Professor and Ex-Director, IASRI, Delhi

NUMBER OF STUDENTS WHO PASSED NET/JRF/GATE: 4

THE FACULTY OF THE DEPARTMENT

Professor

M Borah, MSc (Gauhati), PhD (Gauhati)

Specialization/Areas of interest: Probability Distribution, Optimization using GA

E-mail: mborah@tezu.ernet.in

N D Baruah, MSc (IIT-Kanpur), PhD (Tezpur), Dean, School of Sciences

Specialization/Areas of interest: Number Theory and Mathematics influenced by Ramanujan

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D Hazarika, MSc (Delhi), PhD (JMI), Head of the Department

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Specialization/Areas of interest: Operator Theory, Functional Analysis

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Associate Professor

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Specialization/Areas of interest: Graph Theory

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R Barman, MSc (IIT Delhi), PhD (IIT Guwahati)

Specialization/Areas of interest: Algebraic Number Theory, Theory of Elliptic Curve

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B Deka, MSc (IIT Delhi), PhD (IIT Guwahati)

Specialization/Areas of interest: Numerical Functional Analysis and Finite Elements Method

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S Dutta, MSc (Delhi), PhD (Tezpur)

Specialization/Areas of interest: Statistics (Bayesian Inference Asymptotic Distributions)

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D K Basnet, M.Sc (Gauhati), Ph.D (Dibrugarh)

Specialization/Areas of interest: Algebra (Ring Theory)

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S Sen, MSc (Gauhati), PhD (IIT Guwahati)

Specialization/Areas of interest: Computational Fluid Dynamics

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Assistant Professor

B P Sarmah, MSc (Gauhati), PhD (Gauhati)

Specialization/Areas of interests: Theoretical Physics

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R Haloi, MSc (Gauhati), PhD (IIT Kanpur)

Specialization/Areas of interest: Non-linear Differential Equations, Analysis

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B K Sarmah, MSc (Gauhati), PhD (Tezpur)

Specialization/Areas of interest: Number Theory, Ramanujan Mathematics

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Specialization/Areas of interest: Algebra

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D Kalita, MSc (Gauhati), PhD (IIT Guwahati)

Specialization/Areas of interest: Graph Theory

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P Medhi, MSc (Gauhati), PhD (Gauhati)

Specialization/Areas of interest: Statistics (Queuing Theory)

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D Goswami, M.Sc. (Delhi), PhD (IIT, Bombay)

Specialization/Areas of interest: Finite Element Method

E-mail: deepjyoti@tezu.ernet.in

School of Sciences

DEPARTMENT OF MOLECULAR BIOLOGY AND BIO TECHNOLOGY

THE DEPARTMENT

The Department of Molecular Biology and Biotechnology (MBBT) was established in 1997 and in the next year, this Department received accreditation by the Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India to support its M Sc program. Further, the Department is also supported by grants from DST-FIST and UGC-SAP (DRS-I). The Department offers a 2-year MSc in Molecular Biology and Biotechnology; a 5-year Integrated MSc in Bioscience and Bioinformatics; and PhD in Molecular Biology and Biotechnology. The objective of the Department has been to contribute to the advancement of the emerging areas of basic and applied Life Sciences and to generate trained human resource in the area of Molecular Biology, Biotechnology and Bioinformatics. With highest extramural funding, and with all modern facilities for biotechnological research, during the past couple of years the Department has constantly being ranked within the top 10 biotechnology Departments in the country. Some of the premier Institutes/Universities of the country where ex-students of this Department have been serving are ACTREC (Mumbai), BARC (Mumbai), CCMB (Hyderabad), IISc (Bangalore), NICED (Kolkata), JNU (New Delhi), NCCS (Pune), NIPGR (New Delhi), NIV (Pune), TIFR (Mumbai) etc. In addition, students from this Department are also placed in reputed organizations of world such as Oxford University, Max Planck Institute, Germany. Several research scholars of the Department are pursuing their post-doctoral research in abroad for example, in USA and UK. Students of the Department have regularly been qualifying in national examinations like GATE, DBT, ICMR, NET (UGC/CSIR), and JRF. The Department is a cynosure of interdepartmental programs like Food Processing Technology, Nanotechnology and Bioelectronics and Medicinal Chemistry.

ACADEMIC PROGRAMMES

- MSc in Molecular Biology and Biotechnology
- Integrated MSc in Biosciences and Bioinformatics
- PhD in Molecular Biology and Biotechnology

STUDENT INTAKE

Programme	Student Intake
MSc in Molecular Biology and Biotechnology	30
Integrated MSc	15
PhD	Intake variable

MAJOR EQUIPMENT AVAILABLE

- 4-capillary DNA Sequencer,
- HPLC and UHPLC systems
- Fast protein Liquid Chromatography (FPLC)
- Varian Saturn 2200 GC/MS
- PCR Thermal Cycler
- Fluorescence spectrophotometer

- Trinocular Research Microscope (Leica ATC-2000)
- Tensiometer K9 ET(Kruss GmbH) and accessories
- Fermenter Model BIOFLO 110, NBS and accessories
- Pulse Field, 2D, Submarine Gel Electrophoresis
- SQ Sequencer (Amershan Bioscience)
- Protein Purification System
- 2D Gel electrophoresis
- Multitemp III Water Bath Circulator
- Gel Documentation System
- Mili Q Water Purification System
- Inverted Microscope
- Icematic Flaker
- Hitachi Double Beam, Beckman DU, 530 and other make UV-Vis Spectrophotometer
- Maxi Dry Plus
- Radiation Alert Monitor
- Cold Room
- Quartz water distillation Plant
- Compound Microscope
- ELISA plate Reader
- Biofuge/Microcentrifuge (Refrigerated)
- Horizontal Autoclave
- Horizontal Laminar Flow
- Microtome
- Deep Freeze (-20 deg C)
- Lyophilizer
- Oxygraph
- Image Analyser

RESEARCH FACILITIES

Cold Room
 Animal Tissue Culture
 Plant Tissue Culture (under construction)
 Animal Experimentation Laboratory
 In-House Central Instrumentation Facility

MAJOR AREAS OF RESEARCH

The faculty members from this Department has a very good track record of publications of their research findings in peer reviewed International and national journals. The major areas of research being pursued by the faculty members of this Department are as follows:

Industrially Important Microbial Enzymes and Biosurfactant
 Petroleum Biotechnology for Bioremediation, Microbial Enhanced Oil recovery (MEOR),
 Bioprospecting of oil and Environmental Biotechnology
 Snake venom Biochemistry and Biotechnology
 Drug discovery from Natural Resources Including Medicinal Plants
 Immunology, Immunogenetics of Diseases (Malaria,Cancer and SLE),
 Molecular Evolution
 Molecular Plant Microbe Interactions
 Cancer Biology
 Redox Biochemistry and Enzyme Technology
 Inflammatory gene expression and regulation
 Bio-energy and Food Microbiology
 Nanobiotechnology
 Cell and Molecular Biology, Posttranslational modifications

RESEARCH PROJECTS: ONGOING AND NEW

Project Titles	Funding Agency	Amount in INR	Duration	Principal Investigator
Bioremediation of Crude Oil Contaminated Soil	ONGC	70.03 lakhs	5 years	B K Konwar
Investigation on the Biochemical and Molecular Approaches	DBT	62.37	2 years	A K Buragohain
Isolation, Purification and Characterization of Compounds with Activity Against Mycobacterium Species from Some Medicinal Plants of North East India.	National Medicinal Plant Board, AYUSH	16.92	3 years	A K Buragohain
Assessment of Thrombolytic Potential and Anticancer Activity of Fibrinolytic Enzymes Purified from Russell's Viper Venom and Bacteria Isolated from NE-India	DBT	160.04	3 years	A K Mukherjee
Preparation And Studies on Polymer Anchored Transition Metal Compounds - Towards Development of Bio-Relevant Complexes and Active Oxidation Catalyst	DST	20.85	3 Years	S Baruah
KIR Haplotypic Variation and Activation of Natural Killer Cells in Cancer,	ICMR	27.3	3 Years	S Baruah
Understanding the Molecular Interaction Between NK Receptor Diversity and Activation with Diverse Malignancy in HNSCC Prevalent in the Population of Assam	DBT	49.59	3 Years	S Baruah
Longitudinal Analysis of Changes in Cytokine Profiles of Malaria Patients At Different Stages of Treatment and Disease Resolution: Understanding the Molecular Basis of Cure and Malarial Pathology	DBT	67.06	3 Years	S Baruah
Characterization of A Potential Auto Transporter Adhesion Function in Ralstonia Solanacearum, the Causal Agent of Bacterial Wilt in Plants	DBT	35.66	3 Years	S K Ray
Understanding Codon Usage Bias in Organisms	DBT	15.50	2 Years	S K Ray
Isolation And Characterization of Hydrogen Producing Bacteria from North-Eastern States of India, (With Special Emphasis on Assam and Arunachal Pradesh), for Efficient Conversion of Biomass to Hydrogen	DBT	54.71	3 Years	M Mandal

Study of Microbial Diversity and Biochemical Characteristics Of Selected Non Alcoholic Fermented (Milk, Vegetable And Pulses) Food Product of Assam and Arunachal Pradesh	DBT	56.20	3 Years	M Mandal
Studies on Genetic and Epigenetic Alteration in Head And Neck Cancer Prevalent in North East Region of India	DBT	47.20	3 Years	A Ramteke
Search for Novel Treatments for Snake Venom Poisoning: Composition Analysis of Venoms of Snake Family Elapidae and Viperidae, and Complete Characterization of Their Major Toxins	DBT	49.43	3 Years	R Doley
Isolation, Characterization, Possible Use and Clinical Manifestation of A Neurotoxin From Snake Venom (<i>Naja Siamensis</i>) With Special Reference to Warfare Importance Neuro - Toxin as a Model.	DRDO	9.8	3 Years	R Doley
Studies on Bio-Ecology of Heliopeltis Theivora And Development of An Forecasting Model of Its Incidence for Effective Management	DBT	74.56	3 Years	T Medhi
Multifunctional Hybrid Nanosystems for Molecular Imaging Applications	DBT	363.65	3 Years	E Kalita (Co-PI)
GIS Modeling Based Impact Assessment - Agrowaste Based Nanobiosorbents	DBT	-	3 Years	E Kalita
Assessment of Microbial Communities and Their Biodegradation Potential in Petroleum Hydrocarbon Contaminated Environments in Assam Through Construction of Microcosms and Phylogenetic Approach	ONGC	18.00	3 Years	L Bora
Study on The Regulation of Adipose Tissue Development and Function by Post-Translational Protein Arginylation	DBT	56.10	3 Years	S Saha
Screening and Isolation of Bioactive Compounds from Medicinal Plants Traditionally Used Against Malaria in Arunachal Pradesh	DRDO	9.00	2 Years	N D Namsa

PUBLICATIONS

In International and National Journals

- Barman, A., P Kumar, V Kumar, R Doley, and S K Ray. 2013. Heat shock at 37°C with plasmid ligated at 37°C yields more number of *Escherichia coli* transformants than plasmid ligated at 16°C: a possible role of ligated plasmid conformation during heat shock. *Current Science*, 104 (06).
- Barman, A., P Kumar, V Kumar, R Doley, and S K Ray. 2013. Heat shock at 37°C with plasmid ligated at 37°C yields more number of *Escherichia coli* transformants than plasmid ligated at 16°C: a possible role of ligated plasmid conformation during heat shock. *Current Science*, 104 (06).
- Barua, N., P Sarmah, I Hussain, R C Deka, and A K Buragohain. 2012. DFT-based QSAR models to predict the antimycobacterial activity of chalcones. *J. Chemical Biology & Drug Design*, 79.
- Bora, L. 2013. Characterization of novel phospholipase C from *Bacillus licheniformis* MTCC 7445 and its application in degumming of vegetable oils. *Applied Biochemistry and Microbiology*, (in press).
- Bora, L. 2013. Computational drug target identification in *Streptococcus pneumoniae* using available Microarray data. *Journal of Pharmacy Research*, (in press).
- Das, G., N K Bordoloi, S K Rai, A K Mukherjee, and N Karak. 2012. Biodegradable and biocompatible epoxidized vegetable oil modified thermostable poly(vinyl chloride): thermal and performance characteristics post biodegradation with *Pseudomonas aeruginosa* and *Achromobactersp.* *Journal of Hazardous Materials*, 209-210.
- Das, G., R D Kalita, A K Buragohain, and N Karak. 2013. Biodegradation, cytocompatibility and performance studies of vegetable oil based hyperbranched polyurethane modified biocompatible sulfonated epoxy resin/clay nanocomposites. *Progress in Organic Coatings*, (accepted).
- Das, G., J K Roy, A K Mukherjee, and N Karak. 2012. *Mesua ferrea* L. seed oil modified sulfone epoxy resin and multi-walled carbon nanotube nanocomposites and their biomedical and mechanical properties. *Advanced Science Letters*, 4.
- Das, P., M Kalita, D Mahnot, N K Mahanta, M Mandal, and M Chaudhuri. 2012. Effect of L-ascorbic acid addition on the quality attributes of micro-filtered coconut water stored at 4 °C. *Innovative Food Science and Emerging Technologies*, (in press).
- Devi, R. R., M Mandal, and T K Maji. 2012. Physical properties of simul (red-silk cotton) wood (*Bombax ceiba* L.) chemically modified with styrene acrylonitrile co-polymer and nanoclay. *Holzforschung*, 66.
- Dutta, A., S D Lourembam, S Pradhan, and S Baruah. 2013. KIR diversity in three ethnic populations of Assam state, Northeast India. *Tissue Antigens*, (in press).
- Goswami, B., A Choudhury, and A K Buragohain. 2012. Luminescence properties of a nanoporous freshwater diatom. *Luminescence*, 27.
- Hussain, A., V Saikia, and A Ramteke. 2012. Nitric oxide and modulatory effects of the root extract of *Phlogacanthus tubiflorus* against oxidative stress induced by hydrogen peroxide. *Free Radical and Antioxidant*, 2.
- Jha, D. K., P Deb, E Kalita, M Shameem, and A B Patel. 2012. Synthesis and characterization of iron-rich Fe_xPt_{1-x} ferrofluid for magnetic resonance imaging. *Phys. Scr.*, 85.

- Kalita, R. D., Y Nath, M E Ochubiojo, and A K Buragohain. 2013. Extraction and characterization of microcrystalline cellulose from fodder grass; *Setaria glauca* (L) P. Beauv, and its potential as a drug delivery vehicle for isoniazid, a first line antituberculosis drug. *Colloids and Surfaces B: Biointerfaces*, 108.
- Khanppnabar, B., S Baruah, and S K Ray. 2013. TALE: an emerging tool for genome editing and genetic engineering. *Current Sci.*, 104.
- Kurosaka, S., N A Leu, I Pavlov, X Han, P A Ribeiro, T Xu, R Bunte, S Saha, J Wang, A Cornachione, W Mai, J R Yates, D E Rassier, and A Kashina. 2012. Arginylation regulates myofibrils to maintain heart function and prevent dilated cardiomyopathy. *J Mol Cell Cardiol*, 53.
- Lourembam, S.D., and S Baruah. 2012. Antibody response to allelic variants of 19 kDa fragment of MSP-1: Recognition of a variant and protection associated with ethnicity in Assam, India. *Vaccine*, 17.
- Mukherjee, A. K. 2012. Green medicine as a complementary to antivenom therapy for the clinical management of snakebite: the road ahead. *Indian Journal of Medical Research*, 136.
- Mukherjee, A. K., and S P Mackessy. 2012. Russelobin, a non-toxic thrombin-like serine Protease from the venom of Russell's viper (*Daboia russelli russelli*): Possible applications in cardiovascular drug development. *Toxicon*, 60.
- Mukherjee, A. K., and S P Mackessy. 2013. Biochemical and pharmacological properties of a new thrombin-like serine protease (Russelobin) from the venom of the Russell's viper (*Daboia russelii russelii*) and assessment of its therapeutic potential. *Biochimica et Biophysica Acta*, (in press).
- Mukherjee, A.K., and N K Bordoloi. 2012. Biodegradation of benzene, toluene and xylene (BTX) in liquid culture and in soil by *Bacillus subtilis* and *Pseudomonas aeruginosa* strains and a formulated bacterial consortium. *J Environmental Science and Pollution Research*, 19.
- Mukherjee, A.K., S K Rai, R Thakur, P Chattopadhyay, and S Kar. 2012. Bafibrinase: A non-toxic, non-hemorrhagic, direct-acting fibrinolytic serine protease from *Bacillus* sp. strain AS- S20-I exhibits *in vivo* anticoagulant activity and thrombolytic potency. *Biochimie*, 94.
- Mukhopadhyay, R. 2013. Mouse models of atherosclerosis: explaining critical roles of lipid metabolism and inflammation. *J. Appl. Genet.*, 54.
- Mundkur, L., R Mukhopadhyay, V Deshpande, S Samson, S Tarate, Varma, S V Sivaprasad, X Lu, and V V Kakkar. 2013. Comparison of oral tolerance to ApoB and HSP60 peptides in preventing atherosclerosis lesion formation in ApoB^{tm2Sgy}LDLr^{tm1Her}/J mice. *Journal of Vaccines*, (accepted).
- Nair, R.G., J K Roy, S K Samdarshi, and A K Mukherjee. 2012. Mixed phase V doped titania shows high photoactivity for disinfection of *Escherichia coli* and detoxification of phenol. *Solar Energy Materials and Solar Cells*, 105.
- Pramanik, S., R Konwarh, R C Deka, L Aidew, N Barua, A K Buragohain, D Mohanta, and N Karak. 2013. Microwave-assisted poly(glycidyl methacrylate)-3 functionalized multiwall carbon nanotubes 4 with a tendrillar nanofibrous polyaniline wrapping and their interaction at bio-interface. *Carbon*, 55.
- Ramteke, A., A Hussain, S Kaundal, and G Kumar. 2012. Oxidative Stress and Modulatory effects of the root extract of *Phlogacanthus tubiflorus* on the activity of Glutathione-S-Transferase in Hydrogen Peroxide treated Lymphocyte. *Journal of Stress Physiology & Biochemistry*, 8.

- Roy, J.K., S K Rai, and A K Mukherjee. 2012. Characterization and application of a detergent-stable α -amylase from *Bacillus subtilis* AS-S01a. *International Journal of Biological Macromolecules*, 50.
- Roy, S., N Barua, A K Buragohain, and G A Ahmed. 2013. Study of ZnO nanoparticle: Antibacterial property and light depolarization property using light scattering tool. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 118.
- Saha, S., J Wang, B Buckley, Q Wang, B Lilly, M Chernov, and A Kashina. 2012. Small molecule inhibitors of arginyltransferase regulate arginylation-dependent protein degradation, cell motility, and angiogenesis. *Biochem Pharmacol*, 83.
- Saikia, D., N K Bordoloi, P Chattopadhyay, S Chocklingam, S S Ghosh, and A K Mukherjee. 2012. Differential mode of attack on membrane phospholipids by an acidic phospholipase A2 (RVVA-PLA2-I) from *Daboia russelli* venom. *Biochimica et Biophysica Acta - Biomembrane*, 12.
- Saikia, K., P Deb, and E Kalita. 2013. Facile synthesis of highly luminescent ZnSe(S) alloyed quantum dot for biomedical imaging. *Curr Appl Phys.*, 13.
- Saikia, K., P Deb, and E Kalita. 2013. Sensitive fluorescence response of ZnSe(S) quantum dots: an efficient fluorescence probe. *Phys. Scr.*, (in press).
- Satapathy, S.S., M Dutta, A K Buragohain, and S K Ray. 2012. Transfer RNA gene numbers may not be completely responsible for the codon usage bias in asparagine, isoleucine, phenylalanine, and tyrosine in the high expression genes in bacteria. *J Mol Evol.*, 75.
- Sawian, C.E., S D Lourembam, A Banerjee, and S Baruah. 2012. Polymorphisms and expression of TLR4 and 9 with malaria in two ethnic groups of Assam, Northeast India, *Innate Immunity*, 19.
- Singh, S., J P Saikia, and A K Buragohain. 2013. A novel reusable PAni-PVA-Amylase film: Activity and Analysis. *Colloids and Surfaces B: Biointerfaces*, 106.
- Singh, S., J P Saikia, and A K Buragohain. 2013. A novel green synthesis of colloidal silver nanoparticles (SNP) using *Dillenia indica* fruit extract. *Colloids and Surfaces B: Biointerfaces*, 102.
- Tag, H., P Kalita, P Dwivedi, A K Das, and N D Namsa. 2012. Herbal medicines used in the treatment of diabetes mellitus in Arunachal Himalaya, northeast, India. *J. Ethnopharmacol*, (in press).
- Tanti, B., and A K Buragohain. 2013. Biodegradation of Petroleum Tar by *Pseudomonas* spp. from Oil Field of Assam. *Bioremediation Journal*, (accepted).
- Tanti, B., S K Ray, and A K Buragohain. 2012. Differentiation of petroleum hydrocarbon degrading *Pseudomonas* spp. based on PCR-RFLP of the 16S-23S rDNA intergenic spacer region, *Folia Microbiologica*, 57.
- Upadhyay, J., B Gogoi, A Kumar, and A K Buragohain. 2013. Diameter dependent antioxidant property of polypyrrole nanotubes for biomedical applications. *Materials Letters*, (accepted).
- Yao, P., A A Potdar, A Arif, P S Ray, R Mukhopadhyay, B Willard, Y Xu, J Yan, G M Saidel, and P L Fox. 2012. Coding Region Polyadenylation Generates a Truncated tRNA Synthetase that Counters Translation Repression. *Cell*, 149.
- Zhang, F., S Saha, and A Kashina. 2012. Arginylation-dependent proteolytic processing of talin is associated with cell-cell adhesions. *J Cell Biol.* 197.

Book Chapters

- Ahmed, A G., A K Buragohain, P P Nath, A Gogoi, N Mazumdar, R D Kalita, and A Choudhury. 2010. FTIR and luminescence studies of nanoporous diatom frustules, photonics and nanostructures. In In Mahanta, D., and G A Ahmed (eds). *Photonics and Quantum Structures*. New Delhi: Narosa Publications.
- Mukherjee, A K. and K Das. 2010. Microbial surfactants and their potential applications: an Overview. In Sen, R K (ed). *Biosurfactants*. Landes Bioscience: Texas, USA.

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**International and National**

- M Pathak, A Narah and T Medhi presented a paper, Studies on in-vitro availability of cytochrome P450 of some hydrocarbon degrading bacteria isolated from Borhola oil field, Assam, in the national seminar, Prospects of Molecular, Biological and Biotechnological Applications for Human Welfare, organized by Pandu College, Guwahati, Guwahati, 11-12 May, 2012.
- S K Ray presented a paper, Biology 2012 and Beyond, at Centre for Cellular and Molecular Biology, Hyderabad, Hyderabad, 25-27 November, 2012.
- S S Satapathy, B R Powdel, M Dutta, A K Buragohain, and S K Ray presented a joint paper, Constraint on genome signature by coding sequences in bacterial genomes, in the international conference, International Conference on Biomolecular Forms and Functions, organized by IISc, Bangalore, Bangalore, 08-13 January, 2013.

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

- National Symposium, Recent Advances in Snake Venom Research and Snake bite Therapy: National and International Perspectives, 18-19 December, 2009.
- National Science Day with the theme, Clean Energy Options & Nuclear Safety, 28 February, 2012.
- Workshop, Tools of Proteomics, sponsored by GE Healthcare Life Sciences, 21-22 June, 2012.
- Workshop, Basic Genetic Engineering Techniques for Gene Cloning, 17-21 December, 2012.
- Workshop, Advances in Applied Microbiology and Bioprocess Engineering, 23-24 December, 2012.
- Continuous Medical Education (CME), Immunology, 28-29 October, 2011.
- Protein 3-D structure modeling, 23-26 November, 2011.
- Chemical informatics (applications in drug design), 21-24 March, 2012.
- UGC-SAP National seminar cum DBT-BIF Workshop, Recent Advances in Microbial Biotechnology and Molecular Evolution, 01-04 March, 2013.
- Applications of Web servers in Bioinformatics, 30-31 March, 2013.
- INSA 100 Lectures in Science, 3 November, 2012.

INVITED LECTURES BY THE FACULTY

- A K Mukherjee was invited as speaker and member of the International Scientific Advisory Committee, 17th World Congress of International Society of Toxinology and Venom Week 2012, Honolulu, Hawaii, USA, 8-13 July, 2012.
- A K Mukherjee was invited as speaker and resource person in the national conference, National Conference on Recent Developments in Health, Hygiene and Environment, organized by Defense Research Laboratory, Tezpur, 6-8 November, 2012.
- A K Mukherjee was invited as speaker, in the national conference, 2nd National Conference on Toxinological Society of India, organized by Department of Biochemistry, University of Mysore and Karnataka State Open University, Mysore, 10-12 December, 2012.

A K Mukherjee was the resource person in the workshop, Snakebite study-protocol development workshop, organized by Christian Medical College, Vellore, 11-12 March, 2013.

A K Mukherjee was the Invited speaker, Medical Science Section of 100th session of Indian Science Congress, Calcutta University, Kolkata, 3-7 January, 2013

A K Mukherjee was the invited speaker in the UGC-SAP national seminar, Recent Advances in Microbial Biotechnology and Molecular Evolution, Tezpur University, 1-2 March, 2013.

E Kalita was invited as speaker in the workshop, Molecular Biology Workshop, organized by the Department of Biotechnology, Gauhati University, Guwahati, 22-27 April, 2013.

R Mukhopadhyay delivered the talk, Phosphorylation of a Ribosomal Protein and its Role in Translational Regulation of Inflammatory Genes in the international symposium, International Symposium on Molecular Signaling, organized by Visva-Bharati, Shantiniketan, 18-21 February, 2013.

S Baruah was invited as speaker and resource person in the national conference, National Conference on Recent Developments in Health, Hygiene and Environment, organized by Defense Research Laboratory, Tezpur, 6-8 November, 2012.

S Saha delivered the lecture, ATE1: A Global Regulator and a Promising Drug Target, at the national conference, Recent Developments in Health Hygiene and Environment, organized by the Defence Research Laboratory, Tezpur, 6-08 November, 2012.

S Saha delivered the lecture, Cellular Motility: Outside and Inside, at DST-INSPIRE Internship Programme, organized by Tezpur University, Tezpur, 11-16 June, 2012.

S Saha delivered the lecture, Overview of Gene Cloning, at DBT-Hub workshop, Basic Genetic Engineering Techniques for Gene Cloning, organized by the Department of MBBT, Tezpur University, Tezpur, 17-21 December, 2012.

T Medhi was invited as director of the seminar, Integrated Socio-economic development and Conservation of Environment through Rubber Plantation, organized by the Rubber Growers Association, Bongaigaon, 26 February, 2012.

T Medhi was invited as resource person in the Small Tea Growers' Advisory Programme, organized by Assam Agricultural University, Jorhat, 9 December, 2011.

T Medhi was invited as speaker at Jagannath Baruah College Career Counselling Centre, Jorhat, 25 August, 2011.

AWARDS/ HONOURS RECEIVED BY THE FACULTY/ STUDENTS/ RESEARCH SCHOLARS/THE DEPARTMENT

Prof A K Mukherjee has been appointed as the Affiliate Associate Faculty, in the School of Biological Sciences, University of Northern Colorado, Greeley, USA.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof A K Tyagi, Director, NIPGR, New Delhi

Prof Alok Bhattacharya, Professor, JNU

Prof B A Shanbhag, Chairperson, Zoology Department, Karnatak University, Dharwad

Prof D Syiem, Professor, NEHU, Shillong

Dr Gopal Pande, Scientist, CCMB, Hyderabad

Prof M Syiem, Professor, NEHU, Shillong
Prof Madan Mohan, Adviser, DBT, New Delhi
Dr Niranjan Chakraborty, Scientist, NIPGR, New Delhi
Dr Purnima Sharma, Head, BCIL, New Delhi
| Prof R Manjunatha Kini, Professor, National University of Singapore, Singapore
Prof R V Raghavan, Director NCBS, Bangalore
Prof Srinivas K Saidapur, INSA Senior Scientist, Karnatak University

NUMBER OF STUDENTS WHO PASSED NET/JRF/GATE

- NET (JRF): 3
- NET (LS): 4
- GATE 7

THE FACULTY OF THE DEPARTMENT

Professors

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Nima D Namsa, MSc (Tezpur)

Specialization/Areas of interest: Molecular Virology/Traditional medicinal plants

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DEPARTMENT OF PHYSICS

THE DEPARTMENT

Fifteen years since its commencement in January 1998, the Department of Physics has stridden out not only in its post-graduation teaching but also in new frontiers of research. To keep pace with the advancement in science and technology, new special papers have been included with adaptation to new developments within the course content. To preserve this spirit, the Department, in July 2005, started a two-year PG programme in Nanoscience and Technology. The areas of specialization for post-graduation are: Condensed Matter Physics; Electronics and Photonics; High Energy Physics; and Nano Science and Technology. To develop the students from the graduate level, the Department also started an Integrated MSc in Physics in 2009. Keeping in mind the need of teachers at the school level, the Department has also been running a BSc-Bed programme since July 2011.

Major thrust areas of research of the Department are, Astrophysics, High Energy Physics (Theoretical), Nanomaterials, Neutrino, Optoelectronics, Plasma Physics, Microwaves and Solid State Ionics,.

ACADEMIC PROGRAMMES

- MSc in Physics
- MSc in Nanoscience & Technology
- Integrated MSc in Physics
- Integrated BSc BEd
- PhD in Physics

STUDENT INTAKE

Programme	Student Intake
MSc in Physics	35
MSc in Nanoscience & Technology	20
Integrated MSc in Physics	15
Integrated BSc Bed	10
PhD	Intake variable

MAJOR FACILITIES AND EQUIPMENT AVAILABLE

- High Power Nd-YAG Laser
- Microwave Set-up
- High Vacuum Thin Film Coating Unit
- LCR Bridge Tester
- Computerized insertion loss measurement x-band system
- CTE measurement setup for polymer materials.
- Electronic Balance
- Tube Furnace
- X-Ray Diffraction (XRD)
- Luminescence Spectro Photometer
- Semi Conductor Characterization Setup
- Scanning Electron Microscope (SEM)
- Polarizing Microscope
- UV-Visible Spectrophotometer
- Vector network Analyser
- High Power Microwave Set-up
- FTIR

MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

Principal Investigator	Description of the Project
A Choudhury	<ul style="list-style-type: none"> Our main finding is the observation of magnetism in non magnetic TiO_2 by doping suitable concentration of dopant impurities, such as Co, Mn, Ni, Gd and Cr. Pure TiO_2 shows magnetism when the system is oxygen deficient. Other interesting result is the efficient charge separation and narrowing of band gap of TiO_2 to make it an efficient material for photocatalytic application. We have also synthesized core-shell $\text{Ag}_2\text{S}/\text{HgS}$ nanostructures and by varying shell thickness it has been established that a transition from TYPE 1 to TYPE 2 core-shell nanostructure has occurred in the sample which is very much essential to be used in any photovoltaic device. Also we studied the photovoltaic performance of core-shell TiO_2/MgO coated photoanode under illumination of UV light and the fill factor is found as 0.44. We have studied the photocatalytic behavior of TiO_2/MgO core-shell nanostructure for methyl orange dye under visible light as well as UV light and found that it has showed almost 10 times better photocatalytic activity than core TiO_2 nanostructures. We have been working on Cadmium oxide (CdO) nanoparticles which are synthesized by a simple sol-gel route. We are studying the electrical properties of this semiconductor as they are reported to be shown good conductivity. It is also found that intrinsic SnO_2 annealed at high temperature carries high concentration of electrons nearby the conduction band. A hexagonal shaped Cu doped SnO_2 nanoparticles is prepared and characterised. The experimental findings of Cu doped SnO_2 are also justified by first principle calculation using VASP. $\text{SnO}_2/\text{TiO}_2$ and $\text{TiO}_2/\text{SnO}_2$ possess high photocatalytic activity compared to the bare SnO_2 and TiO_2.
A Kumar	<p>Materials Research Group</p> <ul style="list-style-type: none"> The charge transport of different polyaniline (PANI) nanostructures viz. PANI-CSA nanotubes, PANI-HCl nanofibers and PANI-HCl nanoparticles has been studied in the temperature range 5-300 K to examine the possible correlation between morphology and dopant type. All the nanostructures exhibit metal to insulator (MIT) transition below 40 K. The metallic behavior is ascribed to the electron-electron interaction effects. In the insulating regime of the nanotubes conduction follows the Mott quasi-1D variable range hopping model, whereas the conduction in the nanofibers and nanoparticles occur by variable range hopping of charge carriers among superlocalized states without and with Coulomb interaction, respectively. The superlocalization of electronic states in case of nanofibers and nanoparticles is attributed to the smaller size of dopant Cl^- ion. Small size of Cl^- ion leads to random orientation of polymer chains forcing the charge hopping to take fractional dimensions instead of Euclidean dimension as in case of CSA doped nanotubes. The Coulomb interaction between the carriers dominates the intersite hopping in case of the nanoparticles which is attributed to the confined morphology. PPy nanoparticles with average diameters ranging from 8 nm to 22 nm have been synthesized in SDS micellar solution, in which SDS acts both as a surfactant and dopant. During the polymerization process micelles behave as nano-reactors where polymerization occurs. HRTEM results confirm the formation of spherical solid PPy nanoparticles in between its CMC-I (8×10^{-3} M) and CMC-II (0.2 M). The size of PPy nanoparticles reduces with increasing surfactant concentration due to the reduction in size of SDS micelles at higher surfactant concentration. The optical band gap energy (E_g) reduces with increasing dopant concentration. Thermo-gravimetric (TGA) profile exhibits improvement in the thermal stability of PPy nanoparticles with increasing dopant concentration. PAni nanorods doped with CSA and HCl have been synthesized by interfacial polymerization technique at different dopant concentrations. The resistivity of CSA doped nanorods is smaller than that of HCl doped which may be ascribed to the increasing ordering of polymer chains due to the larger molecular size of CSA. Larger counter- ion, CSA restrict the twisting of PANi chains and keep the chains in a more expanded conformation, resulting in larger conjugation length, which leads to the higher conductivity of CSA doped PANi nanorods. Room temperature ionic conductivity of $9.8 \times 10^{-3} \text{ S cm}^{-1}$ has been obtained for PVdF-HFP-MMT intercalated nanocomposite electrolytes based on ionic liquid, 1-butyl-3-methylimidazolium bromide containing 5 wt. % of MMT. The intercalation of PVdF-HFP into the MMT galleries suppresses the crystallization of the polymer due to steric hindrance produced by MMT layers to the polymer chains leading to the increased uptake of ionic liquid in the amorphous phase, which results in enhanced ionic conductivity. The IL based nanocomposite electrolytes exhibit reasonably high electrochemical stability upto 5.5 V for 5 wt. % of MMT.

	Global Positioning System (GPS) Group <ul style="list-style-type: none"> By using GPS data collected around Kopili fault, the slip of the Kopili fault is found to be ~2-3 mm/yr by right lateral strike-slip fashion. E-W compression is also observed along the length of Kopili fault. The middle portion of the fault seems to be locked and is accumulating stress. The accumulated stress is released in earthquakes and so there is a probability of medium to large earthquake in the region. The power spectral density of GNSS time series have been estimated using periodogram method. The spectra of all sites can be best described with white (constant power) at short periods (high frequency), flicker at longer periods (low frequency). The spectral indices range from 0.59 to 1.54. The means of individual components are 1.04 (north), 1.11 (East), .77 (Vertical). From this it can be inferred that the spectral character in North and East components is same, however, it is different in the vertical component. Since the mean spectral index of all components is 0.97, it can be concluded that most of the time series bear signature of fractal white noise.
J K Sarma	<ul style="list-style-type: none"> Solved the nonlinear GLR-MQ evolution equation to obtain the t-evolution of gluon distribution function and completed the phenomenological study of the behavior of gluon distribution. Completed the comparative study of the linear DGLAP and nonlinear GLR-MQ evolution equations for gluon distribution functions with increasing Q^2. Solved the QCD evolution equation for Longitudinal structure function F_L of proton in leading and higher orders by using Taylor expansion method and thus obtained the t-evolution and x-evolutions upto next-to-leading order. The obtained results are compared with recent experimental data and parameterization. Phenomenological study of the solution of neutrino structure function xF_3 from DGLAP evolution equation in leading and higher orders by using Taylor expansion method and related nuclear effects. X-Ray spectral variability of MRK335 with XMM-Newton. Radius of electron, magnetic moment and helical motion of the charge of electron.
N S Bhattacharyya	<ul style="list-style-type: none"> High power ferrite circulators have become an indispensable component in RF systems for ADS applications in Raja Ramanna Centre for Advanced Technology (RRCAT)/Department of Atomic Energy (DAE). At high powers, spin waves may be excited in non-uniform mode. Spin wave instability is an important measurement required to determine the power handling of ferrite materials for High power circulators. Electromagnetic Interference (EMI) suppression is a major challenge for wireless communication devices, strategic military devices, electronic and consumer goods industries. For effective shielding important aspects to be considered are amplitude attenuation and phase cancellation of the incident electromagnetic wave, reduction of the reflections at the air-absorber interface.
N Das	<ul style="list-style-type: none"> Low frequency dissipative drift instability has been studied in collisional dusty plasma in presence of magnetic field. It is found that dust charging and collision of plasma particles with neutrals are responsible for damping of the wave. A theory has been developed to account for interaction potential among dust grains in presence of asymmetric ion flow near the plasma sheath in magnetized complex plasma. Strength of the ion flow and its effect on crystal morphology has been investigated in presence of applied magnetic field both theoretically and using MD (Molecular Dynamic) simulation. The results show a deformation in crystal structure from regular arrangement with strength of the wake potential. Weibel instability has been investigated in the domain of ultra intense laser plasma interaction relevant to fusion and observed a self generated multi mega-gauss magnetic field due to this instability. The study carries a significant role in fast ignition scheme (FIS) of fusion in terms of heat deposition process from laser to fusion source.

RESEARCH PROJECTS: ONGOING AND NEW

Project Titles	Funding Agency	Amount in INR	Duration	Principal Investigator
Enhancement of Luminescent Quantum Efficiency and Magnetic Properties of Functional Nanomaterials and Related Computational Studies	DST (Nano Mission)	218.23 lakhs	3 years	A J Choudhury
Effect Of Swift Heavy Ion Irradiation on Electrical and Thermal Transport of Conducting Polymer Nanostructures	IUAC	3.63 lakhs	3 years	A Kumar
Electrical and Thermal Transport in Conducting Polymer Nanostructures	UGC-DAE-CSR-Indore	3.93 lakhs	3 years	A. Kumar
Development of Novel Polymer-Silicate Nanocomposite Electrolytes for Lithium Ion Rechargeable Batteries	UGC	10.2 lakhs	3 years	A Kumar
Studies on Gluon Distribution Function and Recombination of Partons	UGC	5.99 lakhs	3 years	J K Sarma
Synthesis and Development of Broadband EMI Shielding Materials Using Magneto-Dielectric-Nanoparticles	DIT	89.9 lakhs	3 years	Nidhi S Bhattacharyya
Investigation of Magneto Viscous and Magneto Optics Properties of Novel Ferrofluids	UGC	8.338 lakhs	3 years	D Mohanta
Photonics Properties of Rare Earth Doped Nanoscale Semiconductors Subjected to Energetic Ion Irradiation	IUAC	3.63 lakhs	3 years	D Mohanta
A Plasma-Based Study of Solar Equilibrium Structure and Fluctuation Dynamics	DST-SERB	12.48 lakhs	3 years	P K Karmakar
A Study of the Dynamics of Dust Particles in Strongly Coupled Plasma	UGC	9.658 lakhs	3 years	N Das
Study of The Role of Collisions and Their Effect on Instabilities in High Density Laser-Plasma Interactions as Well as Low-Density Plasma Transport	BRNS-DAE	24.532 lakhs	3 years	N Das
Investigation Of Photocatalytic Response of TiO ₂ Nanostructures Under Doping and Irradiation for Practical Applications	UGC	13.978 lakhs	3 years	G A Ahmed
Study on Neutrino Masses and Mixing in Context of Recent Neutrino Oscillation Data	UGC	10.508 lakhs	3 years	M K Das
Microwave Technology Based Tea Processing Systems For NE States	SAMEER	55.3 lakhs	2 years	Nidhi S Bhattacharyya
Study on The Controlled Self-Assembly of Magnetic Nanostructures Using Neutron Scattering	UGC-DAE	7.67 lakhs	3 years	P Deb
Development of Nanomaterial Based Dual Mode Contrast Agent and Their Surface Mediated Conjugation Study From First Principles	DBT	122.25 lakhs	3 years	P Deb

PUBLICATIONS**In International and National Journals**

Banerjee, Somik, and A Kumar. 2012. Relaxation and charge transport phenomena in polyaniline nanofibers: Swift heavy ion irradiation effects. *J. non-crystalline solids*, 358.

Banerjee, Somik, Dimpul Konwar, and A Kumar. 2012. Polyaniline nanofiber reinforced nanocomposite coated quartz crystal microbalance based highly sensitive free radical sensor. *Sensors and Actuators*, (in press).

- Bhattacharjee, Saurav, and N Das 2012. Effect of wake potential on Coulomb crystallization in the presence of magnetic field. *Phys. Plasmas*, 19.
- Bhattacharyya, N. S., B Choudhury and J R Deka. 2012. Modified interphase theory to determine dielectric constant of particulate composite material at microwave frequency. *Composites Part B: Engineering*, 43(3).
- Borah, D. Astrophysical Constraints on the scale of Left-Right Symmetry in Inverse Seesaw Models. *Journal of Modern Physics*, 3(29).
- Borah, D., and J M Cline. Inert Doublet Dark Matter with Strong Electroweak Phase Transition. *Physical Review*, D86.
- Borah, D., and R Adhikari. 2012. Abelian Gauge Extension of Standard Model: Dark Matter and Radiative Neutrino Mass. *Physical Review*, D85.
- Borah, K., and N S Bhattacharyya. 2012. Magneto-dielectric composite with ferrite inclusions as substrates for microstrip patch antennas at microwave frequencies. *Composites Part B: Engineering*, 3(3).
- Borah, Kunal, and Nidhi Saxena Bhattacharyya. 2012. Magnetodielectric Composite with NiFe₂O₄ inclusions as Substrates for Microstrip Antennas. *IEEE Transactions on Dielectrics and Electrical Insulation*, 19(5).
- Borah, S., and N S Bhattacharyya. 2012. Broadband magneto-dielectric response of particulate ferrite polymer composite at microwave frequencies. *Composites Part B: Engineering*, 43(4).
- Choudhury, B., and A Choudhury. 2012. Ce³⁺ and oxygen vacancy mediated tuning of structural and optical properties of CeO₂ nanoparticles. *Materials Chemistry and Physics*, 131 (3).
- Choudhury, B., and A Choudhury. 2012. Luminescence characteristics of cobalt doped TiO₂ nanoparticles. *Journal of Luminescence*, 132(178).
- Choudhury, B., and A Choudhury. 2012. Dopant induced changes in structural and optical properties of Cr³⁺ doped TiO₂ nanoparticles. *Materials Chemistry and Physics*, 132 (2).
- Choudhury, B., B Borah, and A Choudhury. 2012. Extending photocatalytic activity of TiO₂ nanoparticles to visible region of illumination by doping of cerium. *Photochemistry and Photobiology*, 88.
- Das, M K. and J K Sarma. 2012. Deviation from tri-bi-maximal mixing with charged lepton correlation in case of normal and inverted hierarchical mass models. *J. Recent Sc.*, 1(5).
- Das, Mrinal Kumar, D Borah, and R Mishra. 2012. Quasi-degenerate Neutrino and Type II seesaw Models. *Phy. Rev.*, D86.
- Das, Mrinal Kumar. 2012. Different mixing scenario of quasi-degenerate neutrino with charged lepton correction. *J. Mod. Phy.* 10(3).
- Das, S K., S Xu, A. H. Emwas, Y Y Lu, and L A Srivastava, L. A. 2012. Archer High energy lithium-oxygen batteries- Transport barriers and thermodynamics. *En. and Env Science.*, 5.
- Deb, P., M Gogoi, and P K Karmakar. 2012. Anomalous magneto-optic Faraday rotation behavior due to resonant tunneling of magnetic moment. *J. Optics*. 41.
- Deka, M., A Kumar, H Deka, and N Karak. 2012. Ionic transport studies in hyperbranched polyurethane/clay nanocomposite gel polymer electrolytes. *Ionics*, 18(181).

- Francis, Ng K., and N Nimai Singh. 2012. Validity of quasi-degenerate neutrino mass models and their predictions on baryogenesis. *Nucl. Phys. B.* 863.
- Ghosh, S., A Choudhury, and J K Sarma. 2012. Radius of electron, magnetic moment and helical motion of the charge of electron. *Apeiron*. 19(3).
- Gogoi, A., D Saikia, A Choudhury, and G A Ahmed. 2012. Laboratory measurements on black carbon and graphite particles in single scattering conditions. *Journal of Laser and Optical Science*, 2(1).
- Gogoi, M., and P Deb. 2012. Light scattering behavior of magnetic field induced directional self assembly of iron oxide nanoparticle suspension. *Nano*, 7.
- Gogoi, M., P Deb, and A Kostka. 2012. Differential tunability effect on the optical properties of doped and undoped quantum dots. *Phys Stat Solidi*, 209.
- Gogoi, M., P Deb, G Vasan, P Keil, A Kostka, and A Erbe. 2012. Direct monophasic replacement of fatty acid by DMSA on SPION surface. *Applied Surface Science*, 258.
- Gogoi, Rupjyoti, and D K Choudhury. 2012. Estimation of ultra high energy neutrino nucleon cross Sections. *Int. J. of Appl. Phys.* 2(3).
- Goswami, B., A Choudhury and A Buragohain. 2012. Luminescence properties of a nanoporous freshwater diatom. *Luminescence: The Journal of Biological and Chemical Luminescence*, 27(1).
- Hazarika, J., Chandrani Nath, and A Kumar. 2012. 160 MeV Ni^{12+} ion irradiation effects on dielectric properties of polyaniline nanotubes. *Nucl. Instr. & Meth.* B288.
- Karmakar, P K. 2012. A new technique for electromagnetic characterization of spherical charged dust molecular cloud. *Results in Physics*, 2.
- Karmakar, P K., and B Bora. 2012. New nonlinear eigenmodes in self-gravitating spherical charged dust molecular cloud. *Physica Scripta*, 86(1).
- Karmakar, P K., and D Mohanta. 2012. A model approach to Fermi Surface construction in nanostructured systems. *J. Comp. Theo. Nanosci.* 9(12).
- Kumar, A., and M Deka. 2012. PEO/P(VdF-HFP) blend based Li^+ ion-conducting composite polymer electrolytes dispersed with dedoped (insulating) polyaniline nanofibers. *J. Solid State Electrochem*, 16 (1).
- Lu, Y Y., S K Das, S S Moganty, and L A Archer. 2012. Ionic liquid-nanoparticle hybrid electrolytes and their application in secondary lithium metal batteries. *Advanced Materials*, 24.
- Lu, Y Y., S K Das, S S Moganty, and L A Archer. 2012. Ionic liquid-nanoparticle hybrid electrolytes and their application in secondary lithium metal batteries. Research highlight in *Nature Materials*, 11.
- Nath, P., and M Buragohain. 2012. Fiber optic sensor for non-intrusive refractive index measurement of reactive chemical solutions. *Pramana-Journal of Physics*, 79(6).
- Nath, P., H K Singh, D Tiwari, and T Basumatary. 2012. Fiber-optic liquid level sensor based on coupling optical path length variation. *Review of Scientific Instruments*, 83.
- Patel, A., R Bhattacharyay, R Srinivasan, E Rajendrakumar, P Bhuyan, P Satyamurthy, P Swain, and K S Goswami.

- 3D thermo-fluid MHD simulation of single straight channel flow in LLCB TBM. Fusion engineering and Design, 87(5-6).
- Pramanik, Sujata, Niranjana Karak, Somik Banerjee, and Ashok Kumar. (2012). Effects of solvent interactions on the structure and property of prepared PANi nanofibers. J. Appl. Polym. Sci., 126(830).
- Roy, S., and GAAhmed. 2012. Design considerations of a λ , λ -dependent laser scattering setup for monitoring small particles. Journal of Laser and Optical Science, 2(1).
- Sarma, J K., and R Sarma. 2012. X-Ray spectral variability of MRK335 with XMM-Newton. JASS, 53(1).
- Sarma, J K., M Devesi, and R Baishya. 2012. Evolution of singlet structure functions from DGLAP equations in next-to-next-to-leading order at small-x. Euro. Phys. 72.
- Sarma, J K., M Devesi, and R Baishya. 2012. Evolution of singlet structure functions from DGLAP equations in next-to-next-to-leading order at small-x. Euro. Phys. 72.
- Sarma, J K., M Devesi, and R Baishya. 2012. Solution of singlet Dokshitzer-Gribov-Lipatov-Altarelli-Parisi evolution equation in next-to-next-to-leading order at small-x. Indian J. Phys. 86(2).
- Sarma, J K., S Ghosh and A Choudhury. 2012. Radii of electrons and their λ -quantized relations. Indian J. Phys. 86(6).

SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

International and National

- A Kumar presented the paper, Polyaniline nanofiber based biocompatible antioxidants and free radical sensors, in the 44th IUPAC World Polymer Congress - 2012, Virginia Tech, Blacksburg, VA, 2012.
- A Pathak participated in the international meeting, International Meeting on Transients and Timing: A Multi wavelength Approach, organized by IUCAA, Pune, Pune, 4-8 March, 2013.
- A Pathak participated in the national conference, National Conference on Theoretical Physics, organized by the department of Physics, Tezpur University, Tezpur, Tezpur, 8-12 February, 2013.
- J K Sarma attended the national conference, 8th National Conference in Physics, organized by PANE, Mizoram University, Mizoram, Mizoram, 17-19 December, 2012.
- J K Sarma attended the national conference, National Conference on Theoretical Physics, organized by Tezpur University, Tezpur, Tezpur, 8-12 February, 2013.
- J K Sarma attended the national conference, National Conference on Contemporary Issues in High Energy Physics and Cosmology (NC-HEPC 2013), organized by Gauhati University Guwahati, Guwahati, 12-14 February, 2013.
- M K Das attended the international conference, XXV International Conference on Neutrino Physics and Astrophysics (NEUTRINO 2012), Kyoto, Japan, 3-9 June, 2012.
- P K Karmakar participated in the national conference, National Conference on Theoretical Physics (NCTP), organized by Tezpur University, Tezpur, Tezpur, 08-12 February, 2013.
- P K Karmakar participated in the workshop, Workshop on Infrared Astronomy, organized by Tezpur University, Tezpur, Tezpur, 19-21 March, 2013.

TALKS BY THE FACULTY ABROAD AND IN INDIA

A Kumar delivered the talk, Electrical Transport in conducting polymers: Models and Mechanisms, for PANE-2012, organized by the Department of Physics, Mizoram University, Mizoram, Aizwal, 17-19 December, 2012.

A Kumar delivered the talk, Electro-transport phenomena in Conducting Polymer Nanostructures, in the international conference, International Conference on Materials Science-2013, organized by the Department of Physics, Tripura University, Agartala, Agartala, 21-23 February, 2013.

Amit Pathak, A C Pradhan, J Murthy, and D K Ojha delivered the talk, Observations of OVI absorption from the Superbubbles of the Large Magellanic Cloud, for the event, Supernova Environmental Impacts, organized by Tata Institute of Fundamental Research, Kolkata, Kolkata, 7-11 January, 2013.

Amit Pathak, R Sarma, and J K Sarma delivered the talk, X-ray spectral study of Mrk 335 using XMM-Newton data, in the national conference, National Conference on Theoretical Physics, organized by the Department of Physics, Tezpur University, Tezpur, Tezpur, 8-12 February, 2013.

Amit Pathak, and T Hussain delivered the talk, Study of the absorption spectra of OVI in LMC and Milky Way, in the national conference, National Conference on Theoretical Physics, organized by the Department of Physics, Tezpur University, Tezpur, Tezpur, 8-12 February, 2013.

Amit Pathak, R Shelton, A C Pradhan, and J Murthy, delivered the talk, OVI emission from symbiotic stars, in the national conference, National Conference on Theoretical Physics, organized by the Department of Physics, Tezpur University, Tezpur, Tezpur, 8-12 February, 2013.

Amit Pathak delivered the talk, (Mid) Infrared Emission from Polycyclic Aromatic Hydrocarbons, in the workshop, Workshop on Infrared Astronomy, organized by the Department of Physics, Tezpur University, Tezpur, Tezpur, 21 March, 2013.

DISTINGUISHED VISITORS TO THE DEPARTMENT

Prof B N Dev, Material Science Department, IACS, Kolkata

Dr Biswajit Paul, Raman Research Institute, Bangalore

Dr D S Raju, Scientist-F, Central Electronics Engineering Research Institute (CEERI), Pillani, Rajasthan

Dr Gunadhar S. Okram, Scientist, UGC-DAE CSR, Indore

Prof I M Govil, UGC Emeritus Fellow

Dr Junaid M Laskar, Max Planck Institute for Dynamics & Self Organization, Göttingen, Germany

Prof K D Krori, Ex-principal of Cotton College, Guwahati

Dr Kartik Patel, Laser & Plasma Tech. Division, Bhabha Atomic Research Centre, Mumbai

Dr Pranjal Kr. Gogoi, Post-Doc. Fellow of Singapore National University, Singapore

Prof Purushattam Chakraborty, senior Professor and Head, Surface Physics Division, Saha Institute of Nuclear Physics, Kolkata

Prof U C Joshi, Physical Research Laboratory (PRL), Ahmadabad

SEMINARS/WORKSHOPS/SYMPOSIA/OTHER SUCH PROGRAMMES ORGANIZED BY THE DEPARTMENT

Workshop on Astrophysical Observation and Data Analysis, on June 5 - 7, 2012

National Conference on Theoretical Physics (NCTP-2013), on Feb 8-12, 2013

Workshop on Infrared Astronomy and Data Analysis, on March 19-21, 2013

NUMBER OF STUDENTS WHO PASSED NET/SLET/JRF/GATE

- NET: 2
- SET: 6
- GATE: 1

THE FACULTY OF THE DEPARTMENT**Professors**

A Choudhury, MSc (Delhi), PhD (Oxford)

Specialization/ Areas of interest: Nanotechnology, Condensed Matter Physics, Laser based instrumentation

E-mail: ajc@tezu.ernet.in

A Kumar, MTech (IIT Kanpur), PhD (IIT Kanpur)

Specialization/ Areas of interest: Materials Science/Condensed matter Physics, GPS

E-mail: ask@tezu.ernet.in

J K Sarma, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: High Energy Physics, Particle Physics

E-mail: jks@tezu.ernet.in

N S Bhattacharyya, M.Sc (Merrut), PhD (Delhi)

Specialization/ Areas of interest: Microwave, Material Devices and Antennas

E-mail: nidhi@tezu.ernet.in

N Das, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: High Energy Physics, Plasma Physics

E-mail: ndas@tezu.ernet.in

Associate Professors

G A Ahmed, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: Laser Physics

E-mail: gazi@tezu.ernet.in

P Deb, MSc (Calcutta), PhD (Jadavpur)

Specialization/ Areas of interest: Nanoscience and Technology

E-mail: pdeb@tezu.ernet.in

D Mohanta, MSc (Utkal), PhD (Tezpur)

Specialization/ Areas of interest: Nanotechnology & Condensed Matter Physics

E-mail: best@tezu.ernet.in

P K Karmakar, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: Theoretical Plasma Physics

E-mail: pkk@tezu.ernet.in

M K Das, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: High Energy Physics, Neutrino

E-mail: mkdas@tezu.ernet.in

P Nath, MSc (Tezpur), PhD (Gauhati)

Specialization/ Areas of interest: Fibre Optics

E-mail: pnath@tezu.ernet.in

P J Bhuyan, MSc (JNU), PhD (Gauhati)

Specialization/ Areas of interest: Plasma Simulation

E-mail: pjb@tezu.ernet.in

Assistant Professors

Ng K Francis, MSc (Delhi)

Specialization/ Areas of interest: High Energy Physics (Theoretical)

E-mail: francis@tezu.ernet.in

R Biswas, MSc (Dibrugarh)

Specialization/ Areas of interest: Electronics & Condensed Matter Physics, Seismology

E-mail: rajib@tezu.ernet.in

A Pathak, MSc (Gorakhpur), PhD (Gorakhpur)

Specialization/ Areas of interest: Astrophysics

E-mail: amit@tezu.ernet.in

R Gogoi, MSc (Gauhati), PhD (Gauhati)

Specialization/ Areas of interest: High Energy Physics

E-mail: rgogoi@tezu.ernet.in

D Borah, MSc (IIT Bombay), PhD (IIT Bombay)

Specialization/ Areas of interest: High Energy Physics

E-mail: dborah@tezu.ernet.in

S K Das, MSc (IIT Guwahati), PhD (IISc)

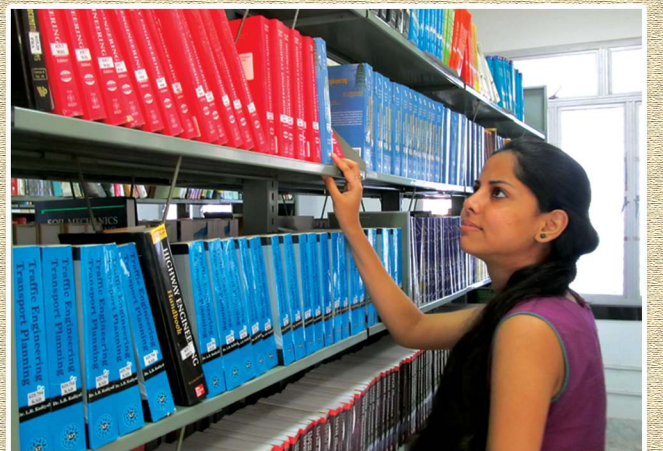
Specialization / Areas of interest: Material Science

E-mail: skdas@tezu.ernet.in



CENTRAL FACILITIES AND OTHER SERVICES

THE CENTRAL LIBRARY
CENTRE FOR ASSAMESE STUDIES
CENTRE FOR OPEN AND DISTANCE LEARNING
CHANDRAPRABHA SAIKIANI CENTRE FOR WOMEN'S STUDIES
THE COMPUTER CENTRE
THE ENGINEERING CELL
THE EQUAL OPPORTUNITY CELL
THE HEALTH CENTRE
THE HORTICULTURE SECTION
THE INTELLECTUAL PROPERTY RIGHTS CELL
THE INTERNAL QUALITY ASSESSMENT CELL
REPORT FROM DEAN OF STUDENTS' WELFARE
THE SPORTS SECTION
THE ST/SC CELL
THE TRAINING AND PLACEMENT CELL
THE YEAR IN FIGURES



THE CENTRAL LIBRARY

THE LIBRARY

The Central Library of the University was established in 1994. The Library holds its goal of achieving the height of an ideal University library in the country and of serving the University community the best possible ways in their academic and research pursuit. Its current Homepage provides electronic access to full texts and bibliographical databases, e-journals and also to its most actively used collection, which is available to users through OPAC (Online Public Access Catalogue). The Library is fully computerized with the Libsys software, which is an integrated multi-user library management system that supports all its in-house operations.

THE LIBRARY BUILDING

The Library is housed at the centre of the University campus in an aesthetically built two storied building occupying an area of 2198 sq mt.

MANAGEMENT

The Library Committee is the apex body for management of the Library and it is constituted by the Vice-Chancellor of the University as the Chairman, the Librarian as the Member-Secretary, Deans, and nominees of the Deans, and one student as members.

OPENING HOURS

The Library is open from 9 am – 12 midnight on all working days, from 10 am to 5 pm on Saturdays and Sundays.

COLLECTIONS

Currently the Library has a robust collection of over 57, 450 volumes of print documents and subscriptions of a total of 931 journals (print 150, online 771). It has three databases through INDEST-AICTE Consortium and other publishers. Besides the UGC-Infonet Consortia of INFLIBNET Center is providing access facility to 9,089 e-journals and eleven databases. DelCon DBT-eLibrary Consortium is also providing access to 917 e-journals and one database. Currently the library is also stocked with 81 VCDs and more than 1750 CDs.

Current Collection of the Library

Books	57450
Books added during 2012-2013	3197
Indian Journals subscribed for 2013	65 (print)
Foreign Journals subscribed for 2013	85 (print) + 771 (online)
Back volume of journals	5084 (46 titles of journals)
Theses	220
E- resources through UGC-Infonet Consortium	9089 e-journals and 11 databases
E-resources through DelCon DBT-e Library Consortium	917 e-journals and 1 database
E –Database subscribed by Tezpur University	3 databases
CD/ DVD-ROM	1750 CD-ROMs and 81 VCDs
VHS Cassettes	36

DEVELOPMENTS

The following developments were made during the concerned period:

Government Publications Section: A separate section for government publications was created in order to provide easy access to such publications both in print and online.

Special collection: The Library collected a most precious collection: 32 hand-written personal diaries of Lakhminath Bezbaroa (1868–1938).

Bibliographical database of PhD theses and Masters dissertation: The Library developed a centralized database of all the PhD theses/Masters Dissertations submitted to the University.

Tezpur University Knowledge Repository (TUKR) formed: The Library developed an institutional repository: Tezpur University Knowledge Repository (TUKR). The objectives of TUKR are to collect, preserve and disseminate the intellectual output of the University. TUKR is accessible from the Library website and is also available at <http://192.168.98.248:8080/jspui/>.

Web Page redesigned: The Website of the Library was redesigned with new additions like Open Access Resources, Open Courseware, Research Support Services and Current Awareness Services.

Research support service: The Library also started a research support service. The main objective of this service is to provide information related to research and development.

CD-ROMs database: The Library created a database of CD-ROMs.

LIBRARY SERVICES

- The Library is providing the following services:
- Book Lending Services
- Book Bank Facility (an additional arrangement of lending books to economically weaker students)
- Reference Services (both in-house and off-house reference services are provided to faculty members, research scholars and other users)
- Online Public Access Catalogue (OPAC)
- User Orientation for Student, Research Scholars and New Users and Information Literacy Programmes
- E-delivery of Literature to Remote Indenters through UGC-Infonet Consortium
- Current Awareness Service (e- News, InfoJournal, InfoGranth)
- New Arrival of Books
- Training cum Demo on Electronic Resources
- Online Renewal and Reservation of Books
- Photocopy Services
- Mobile Alert Service
- Separate Reading Facility for Children
- Library & Information Services to Outsiders on Request
- Research Support Services

USES

Issue/return of books (2012-2013)

User category	Student	Research Scholar	Faculty member	Staff	Total
No of users	2161	375	262	196	2994
Average Issue/return	61	36	10	10	50
Annual Issue/return	131767	13499	2489	2003	149758

Visitors to the Library (2012-2013)

Visitor category	Student	Research Scholar	Faculty member	Staff	Outsider	Total
Average daily visitor	196	21	5	3	1	226
Annual	71642	7411	1647	1235	412	82347

Current Library Staff

Sl. No.	Designation	No of staff
1	Librarian	1
2	Deputy Librarian	1
3	Assistant Librarian	1
4	Information Scientist	1
5	Professional Assistant	2
6	Semi-Professional Assistant	2
7	Upper Division Clerk	1
8	Library Assistant	3
9	Library Attendant	2
10	Multi-Tasking Staff	4
11	Bearer	1
	Total	19

WORKSHOP AND SEMINAR ORGANIZED

The following events were organized during the concerned period:

National Workshop on Building Digital Libraries, 8-10 September, 2012.

Seminar on EBSCO Discovery Service (EDS), 30 November, 2012.

PUBLICATIONS**Books**

Saikia, M. and M Eqbal (eds). 2013. *E-resources Management in Libraries: Issues and Challenges*. Guwahati: K K Publication. ISBN: 9789381691168.

Book Chapters

Eqbal, M. and M. Saikia. 2013. Exploring total quality management in central university libraries of India. In Sharma, P. and R Kumar (eds). *Collection Development and Management in Libraries and Information Centers in Digital Scenario*. New Delhi: SSDN Publishers& Distributors. ISBN: 9789381176887.

Eqbal, M. and M Saikia. 2013. A Study of Service Quality Management at Maulana Azad Library of Aligarh Muslim University. In Tiwari, R et al (eds). *Trends and Development in Library and Information Science*. New Delhi: Zanith Publication. ISBN: 9788190953917.

Saikia, M. and M Eqbal. 2013. Exploring Total Quality Management in Central University Libraries of India. In Sharma, P. and R Kumar (eds). *Collection Development and Management in Libraries and Information Centers in Digital Scenario*. New Delhi: SSDN Publishers& Distributors. ISBN: 9789381176887.

Saikia, M. and M Eqbal. 2013. A Study of Service Quality Management at Maulana Azad Library of Aligarh Muslim University. In Tiwari, R et al (eds). *Trends and Development in Library and Information Science*. New Delhi: Zanith Publication. ISBN: 9788190953917.

Sarma, D. and G C Talukdar. 2013. Electronic resources at the Central Library of Tezpur University: an overview. In Saikia, M. and M. Eqbal (eds). E-Resources Management in Libraries: Issues and Challenges. Guwahati: K. K. Publication. ISBN: 9789381691168.

Talukdar, G. C. and D Sarma. 2013. Electronic resources at the Central Library of Tezpur University: an overview. In Saikia, M. and M Eqbal (eds). E-Resources Management in Libraries: Issues and Challenges. Guwahati: K. K. Publication. ISBN: 9789381691168.

Papers Published in Journals

Chandel, A. S. and M Saikia. 2012. Challenges and opportunities of e-resources. *Annals of Library and Information Studies*. 59(3), 148-154.

Eqbal, M. and M Saikia. 2012. Application of knowledge management in university libraries: issues and challenges. *Gyankosh: The Journal of Lib. & Info. Management*, 3(1).

Eqbal, M. and M Saikia. 2012. Copyright act in the digital age: an overview. *Vidhigya: The Journal of Legal Awareness*, 7(2).

Saikia, M. and M Eqbal. 2012. Application of knowledge management in university libraries: issues and challenges. *Gyankosh: The Journal of Lib. & Info. Management*, 3(1).

Saikia, M. and M Eqbal. 2012. Copyright act in the digital age: an overview. *Vidhigya: The Journal of Legal Awareness*, 7(2).

Shantadevi. T., R Rajesh, and C Smitha. 2013. Role of Public Library in implementing e-governance in Karnataka: issues and problems. In Proceedings of the 58th Indian Library Association International Conference on Next Generation Libraries: New Insights and Universal Access to Knowledge (LIANG-2013. Organized by Dept of Library and Information Science, Karnataka University, Dharma and Indian Library Association, New Delhi, 24-27 February, 2013.

SEMINARS/CONFERENCES ATTENDED

G C Talukdar presented a paper, Use of e-resources in the Engineering Colleges of Guwahati with reference to INDEST consortium: a study, at the 29th Convention & Conference of SIS, NIT Silchar, Silchar, 26-28 November, 2012.

R Borkakoti and G C Talukdar presented a paper, Open Source Library Management And Digital Library Software: An Overview, at the 13th ACLA Biennial Conference cum UGC National Seminar, Nagaon College, Nagaon, 17-19 March, 2013.

R Borkakoti and G C Talukdar presented a paper, Role of National Mission for Manuscripts on Preservation and Conservation of Manuscripts in the K K H Library, Gauhati University and Sankardeva Kalakshetra, Guwahati: A Study, at the 29th Convention & Conference of SIS, NIT Silchar, Silchar, 26-28 November, 2012.

FUTURE PLANS

Designing and developing a Subject Gateway
RFID implementation
Remote login access

THE CENTRE FOR ASSAMESE STUDIES

The Centre for Assamese Studies of the University completed its first year on 7 June 2012. During the concerned period the following programmes events took place at the Centre:

The First Foundation Day was celebrated on 7 June 2012 with two lectures, *Life and Works of Lakshminath Bezbaroa* and *The Contemporary World as Viewed by an Author*, given respectively by Dr Satish Bhattacharya and Shri Sivananda Kakati. There was a film screening of Bhabendrath Saikia's *Agnisnan* in the second session the day.

Amongst the major achievements of the Centre during the concerned period, Dr Suranjana Barua's translation of Rajanikanta Bordoloi's epochal novel *Miri Jiyori* was published by Publication Board, Assam in October 2012 and Dr Juri Dutta's manuscript *Representation of Ethnic Worlds in Select Fictions of India: A Comparative Study* was accepted for publication by Sage Publications, India.

The Centre organized a two-day workshop cum seminar on Lakshminath Bezbaroa on 26-27 November, 2012. The workshop was a precursor to a volume to be published by the University as part of the celebrations of the 150th birth anniversary of Bezbaroa in 2014. This proposed volume will look at Bezbaroa's works and contributions vis-à-vis the literary history of Assam from multiple perspectives. A total of 16 papers on different aspects of Bezbaroa's life and literary contributions were presented by members of various Departments/Centre. The paper presenters were Prof Amarjyoti Choudhury, Prof Pradip Jyoti Mahanta, Prof Madan M Sarma, Prof Sunil Kumar Dutta, Prof Chandan Sarma, Ms Hemjyoti Medhi, Dr Juri Dutta, Dr Sanjib Sahoo, Dr Debarshi Prasad Nath, Dr Rabin Deka, Dr Suranjana Barua, Dr Gautam K Borah, Dr Parasmoni Dutta, Dr Arup Kumar Nath, Ms Pallavi Jha, and Prof Alak Kumar Buragohain.

Dr Juri Dutta and Dr Suranjana Barua from the Centre have also been involved in the English translation of the works of Bishnuprashad Rabha. Dr Barua also rendered editorial assistance to the editors of the translations.

CURRENT PROJECTS

Currently the Centre is staffed with two Research Associates (Dr Suranjana Barua and Dr Juri Dutta). One other Research Associate Dr Arup Kumar Nath joined as Assistant Professor in the Department of English and Foreign Languages in September 2012.

Dr Juri Dutta has undertaken translation of Narayan's *Kocharethi: The Araya Woman* into Assamese (permission granted by Oxford University Press, India) along with which she is also working on a study *A Comparative Study of Literary Texts by Women Writers in India*; Dr Suranjana Barua is working on a socio-linguistic research project on *The Self-Other Axis in Relation to Assamese Peer Groups* which is nearing completion and she will then be working on the (tentatively titled) topic *A History of Translation Activities/Studies*. Dr Arup Kr Nath is working on the digitized version of the *Gunamala* (to be uploaded shortly).

Following are the research papers produced during the aforesaid period:

Barua, Suranjana. 2012. 'Tell-tale stories': Cross-cultural perspectives on the role of the ancillary narrative. In Proceedings of the the 34th All India Conference of Linguists, NEHU, Shillong, 1-3 November, 2012 (forthcoming).

Barua, Suranjana. 2013. *Language and the vicarious emotion: Indira Goswami's delineation of Bhupen Hazarika. Literary Insight, Vol 4*, ISSN 0975-6248. 131-137.

Dr Suranjana Barua is also on the Editorial Committee of the *Language and Language Teaching* – a peer reviewed half-yearly international journal launched by Vidya Bhawan Society and Aziz Premji University.

THE CENTRE FOR OPEN AND DISTANCE LEARNING

THE CENTRE

The Centre for Open and Distance Learning (CODL) was established in June, 2011 with the aim of disseminating knowledge and imparting quality education through open and distance learning mode. The Centre offers various post-graduate, undergraduate, diploma and certificate programmes in emerging areas of science, technology & engineering, social sciences, management and humanities with flexible system to cater to the needs of the learners who otherwise cannot avail the regular mode of education. The basic focus of the Centre is to prepare human resources of the region and the country by making them skilled and employable.

ACADEMIC PROGRAMMES

The CODL has been offering the following programmes since 2012:

1. MA in Mass Communication
2. PG Diploma in Electronic Media
3. PG Diploma in Governance and Development
4. PG Diploma in Functional Hindi
5. PG Diploma in Retail Management
6. PG Diploma in Investment Management
7. PG Diploma in Human Resource Management
8. PG Diploma in Environmental Management
9. MSc in Mathematics
10. PG Diploma in Renewable Energy & Energy Management
11. PG Diploma in System Management

The admission process began in March 2012. Altogether 87 learners were admitted.

The examinations for first batch of the students (Semester 1) were held in August-September 2012.

The second batch of 86 students were admitted in August 2012. However, no learner was admitted to M.Sc. in Mathematics and PG Diploma in Electronic Media.

The admission process for the third batch of students began in March 2013. One more programme PG Diploma in Translation (Hindi-English) was introduced during this semester.

The first semester examinations for the second batch and the second semester examinations for the first batch began in March 2013.

THE CURRENT STAFF

Prof Madan M. Sarma, Director
 Dr Bhim Pd Sharma, Jt Director
 Dr Santanu Sharmah, Jt Director
 Ms Bashabi Gogoi, Assistant Professor
 Mr Uttam Kr Pegu, Programme Co-ordinator, MCJ
 Mr A Nagaraj, Programme Co-ordinator, MCJ
 Prof Chandan K Sharma, Programme Co-ordinator, Sociology
 Dr S K Tripathi, Programme Co-ordinator, Hindi
 Dr Anjan Bhuyan, Programme Co-ordinator, Business Administration
 Dr Runumi Das, Programme Co-ordinator, Business Administration
 Dr Nirmali Gogoi, Programme Co-ordinator, Environmental Science
 Dr Dipak Nath, Programme Co-ordinator, Environmental Science
 Dr S Dutta, Programme Co-ordinator, Mathematical Science
 Dr S. Sen, Programme Co-ordinator, Mathematical Science
 Dr D C Baruah, Programme Co-ordinator, Energy
 Mr S Mohapatra, Programme Co-ordinator, Energy
 Dr Sarat Sahariah, Programme Co-ordinator, CSE
 Mr Kalyan Koch, Stenographer, Grade II
 Mr Gunadhar Bora, MTS

CHANDRAPRABHA SAIKIANI CENTRE FOR WOMEN'S STUDIES

THE CENTRE

The CSCWS (Chandraprabha Saikiani Centre for Women's Studies) functions as a agent to coordinate and promote studies on women belonging to the diverse socio THE CENTRE cultural milieu of a multicultural North East India and the assimilation of women from marginalized tribal/non tribal and ethnic groups through outreach activities such as field study, advocacy, workshops to enhance awareness and to train manpower to conduct research in women studies. The centre connects, coordinates and constructs a community of women who would significantly contribute towards meeting objectives of gender sensitization and empowerment in this region. The Centre was established after the University Grants Commission (UGC), New Delhi approved its proposal (F. 40-13/ (2005) (GA-1) (Vol. -II)/ 5069 dated 21.10.2009) for establishment of such a centre at the University.

ACTIVITIES DURING 2012-13

Dr Anungla Aier, eminent anthropologist and expert in Women's Studies delivered a lecture, Customary Law Practices and the Issue of Gender Displacement, at the Centre on 31 August 2012. In her talk Dr Aier projected her views on traditional customary laws of tribal areas of North East India and its effect on women.

The Centre organized a 5-day workshop, Capacity Building of Women Managers in Higher Education, at the University from during 3-7 September, 2012, which was attended by a total of 35 participants. The workshop was held within the UGC directed project, Sensitivity/Awareness/Motivation (SAM). Resource persons included among others Prof Padma Ramachandran and Streamlet Dkhar. The workshop was formally inaugurated by Prof Mihir Kanti Chaudhury, Vice Chancellor, Tezpur University with a thought provoking speech.

Jarjum Ete, Secretary of National Alliances of Women and former Chairperson, APSCW delivered at the Centre a talk, Question of Tribal Women, on 31 October 2012.

An IDC course named Introduction to Women's Studies was introduced during this period in order to bring Women's studies into focus.

Prof M Dolores Herrero, and Dr Annethe Gomis from University of Zaragoza, Spain, delivered two talks at the Centre, Status of Women in Spain, and Feminism on 5 February 2013.

Students from the University presented their views on different themes such as Women and Violence, Women and Health, and Women and Media on the International Women's Day, 8 March 2013.

A community extension programme was organized in collaboration with the NGO, Adhar in the Naapam area of Tezpur on Women's right on 8 March 2013. The programme focused on the issues related to women and legal rights.

A workshop, Violence against Women, was organized in collaboration with the NGO, THE EAST on 8 August 2012. A group of community leaders from all over Assam narrated their experiences of violence and discrimination. Students from the University were asked to derive strategies to overcome various forms of violence. A film show was also organized.

Prof Shiela Bora, Visiting Professor Gauhati University, delivered at the Centre a series of lecture: Women and Education with special reference to 19th Century Assam, Waves of Feminism, Women and the National Movement in Assam, 4-7 March 2013.

PUBLICATIONS

Mahanta, Mousumi. 2012. Double stigmatization: Fighting with mental illness and womanhood. *International Journal of Humanities and Social Sciences*, 2(2).

Kumari, Pratisha. 2012. Food and gender: Some observations on the food ways of the Missings of Assam. *Contemporary Discourse*, 3(1).

ONGOING RESEARCH PROJECTS

Role of Women in the Survival of the Textile of Assam by Subhra Devi, Asst Curator, Museum and Archive, Dept. of Cultural Studies. (Duration: One year. Funds allocated: Rs 50 thousand).

Women and Community Radio in North – East India by Bidu Bhusan Dash, School of Media and Cultural Studies, TISS, Mumbai. (Duration: One year. Funds allocated: Rs 50 thousand).

A book on Women and Displacement is in the making. Contributors are scholars from across India. Publication is due in January 2014.









THE COMPUTER CENTRE

THE CENTRE

The Computer Centre was established in 1997 with the objective of creating central computational facilities for students, research scholars, faculty and staff of the University under the Computer Centre Scheme of the University Grants Commission (UGC). The main unit of the Computer Centre has a lab space of 128 sqm with 60 desktop computers and an additional floor-space of 50 sqm with dedicated Servers & Network Management Systems. The other unit of the Computer Centre, which is housed at the School of Engineering, Complex has a total of 68 desktop computers.

The Centre has built-up a state-of-the-art Gigabit Local Area Network (LAN) at the campus with Internet & Email along with services like remote login and file sharing services. The campus is fully networked via Local Area Network that has over 1000 official terminals and more than 2000 personal user terminals. There are approximately 4000 network outlets deployed at various locations at the campus. The whole network is fully managed by the Computer Centre staff comprising of one Engineer, two Junior Programmers, one Senior Technical Assistant and four Technical Assistants. Moreover, the Centre has been running part-time (evening) short-term computer courses (DOEACC 'O', and 'A' level) with the support of the Department of Computer Science and Engineering of the University.

One Gigabit internet link commissioned in September 2011 under the aegis of NME-ICT (National Mission of Education through Information Communication Technology). This link now has been shifted to National Knowledge Network (NKN). The NKN connectivity is currently supporting 150 Mbps (downlink speed). The University has continued with its 2Mbps commercial link via Educational and Research NETwork (ERNET) as backup link, which is being primarily used for E-Mail and Domain Name Services (DNS).

During 2012-13 two new servers were commissioned for Oracle 10g based Database Management System. The Itanium2 based High Performance Compute Server (SGI Altix 350) with 4 Itanium-2 64bit has been in operation un-interruptedly since year 2004 and has been under the comprehensive Annual Maintenance Contract (AMC). During the concerned period all the eight old hostels of the University received Optical Fiber Cable (OFC) Network, which were earlier connected through ADSL links. This project was carried out by BSNL under the NMEICT Scheme. A total of 4.5Km OFC and 160 Nos. of Network Ports were installed collectively for these hostels. A Video Streaming Server with storage capacity of 16TB has been commissioned at the Centre for the University Community. A state-of-the art Video Conference Facility has also been commissioned at the Dean's Office, SoE Complex.

The Computer Centre has signed Microsoft Campus Agreement for software licensing. All on the University campus can now avail of the Microsoft Software for official as well as private use. During 2012-13 a 10-day workshop, SAKSHAM, was held at the Computer Centre for the general Faculty of the University. The workshop was organized by Microsoft. The Computer Centre is soon establishing a Microsoft Innovation Center (MIC).

SERVICES PROVIDED BY THE COMPUTER CENTRE

The chief goal of the Computer Centre has been to provide quality information technology services including computational facilities to the University community. In addition to the maintenance of the computational infrastructure, the following services can be had the Computer Centre Team:

- Providing Email & Internet Services
- Providing credit/audit practical courses to the different Departments
- Organizing practical sessions for various workshops and refresher courses organized by various Departments

- Organizing training programmes for the employees
- Assist the Administration in the process of selection and procurement of computing resources
- Providing maintenance services for computers/peripherals to the Faculty/Staff /Departments
- Maintaining and monitoring the Campus LAN
- Maintaining and monitoring various Internet Links
- System Administration, Network Administration and monitoring of various servers - Email, Web, Proxy, Firewall, etc.
- Maintaining the University Website and intranet portal
- Develop, procure and maintain software for administrative and other purposes of the University
- Computer virus cleaning and other software maintenance
- Providing and maintaining the MMPs in the common auditoriums/conference halls
- EPABX system administration and maintenance

INFRASTRUCTURE AVAILABLE AT THE COMPUTER CENTRE

List of Servers

SL	Server Particulars	Hardware (Make/Model)	Operating System and Application Platform
1	Email cum DNS Server	IBM / X226	Redhat Enterprise Linux ES 4.0/ Sendmail , Bind
2	Proxy Server	IBM / x3630M3	Redhat Enterprise Linux ES 6.0/ Squid Proxy
3	Proxy Server(Backup)	HP / DL-380G5	Redhat Enterprise Linux ES 4.0/ Squid Proxy
4	Web cum Secondary DNS Server	HP / DL-350G5	Redhat Enterprise Linux ES 4.0/ Apache
5	Oracle 10g Database Server	HP / DL-380G5	Windows 2003 Server/ Oracle 10g Suite
6	File cum Kaspersky Antivirus Server	HCL / GL-2360	Windows 2003 Server/ Kaspersky Total Space Security Admin
7	File Server: Programming	HCL / GL-2360	Redhat Enterprise Linux ES 4.0/ Open Source
8	Oracle 10g Database (new)	IBM/X3560	Windows 2008 R2 Server/ Oracle 10g DB
9	Oracle 10g App. Server(new)	IBM/X3560	Windows 2008 R2 Server/ Oracle 10g App
10	Video Streaming Server with Storage	IBM/X3650 + IBM/DS3524	Windows 2008 R2 Server/ Adobe Media Server 5

Computer Terminals & Peripherals Available

Unit No	Unit Name/Location	Terminals & Peripherals
Unit-0	Central Computer Centre (Academic Building -2)	Terminals = 60 Laser Printer = 2 Scanner = 2
Unit-1	Computer Centre-Cluster-1 (SoE Complex)	Terminals = 68 Laser Printer =1

Special Computing Facilities

A High Performance Compute Server (SGI Altix350) with four Itanium 2 64-bit processors commissioned in 2004 has been running smoothly over the last six years and it is presently under the Annual Maintenance Contract (AMC). This server is being used extensively by the University research community for their computational job.

THE CURRENT STAFF**Head**

Prof N Sarma, BE (JCE), MTech (IIT Kharagpur), PhD (IIT Guwahati)

Computer Engineer

D K Sarma, BE (JEC), MS (Tezpur University)

Junior Programmers

D C Choudhury, MCA (Tezpur University)

P Rajkhowa, BE (JCE), PGDAC (CDAC)

Senior Technical Assistant

A K Das, Diploma in Engg (CSE)

Technical Assistants

M Baruah, Diploma in Engg (CSE)

N K Deka, Diploma in Engg (Electronics & Telecommunication)

A Sarmah, Diploma in Engg (CSE)

P Borah, DOEACC-A Level, MS(IT)

Student Assistants: 5

Bearers: 2

EPABX Technicians: 2 (contractual)

THE DBT NODAL CENTRE

THE CENTRE

The Department of MBBT and GOI decided to establish a Nodal Centre at Tezpur University in September 2009 for coordinating upgradation of facilities for biomedical research, teaching and service of Medical Colleges and Biomedical Research Institutes of North East India. This Centre coordinates now two projects sanctioned by the Department of Biotechnology, GOI. It is staffed with two scientists and two office assistants.

- *Development/Upgrading Infrastructure in Medical Colleges in North Eastern States of India.* (Sanctioned 2009 Amount: Rs 4000.00 lakhs (Rupees four thousand lakhs only).

The year 2013 marks the completion of four years of the Infrastructure upgradation and capacity building being carried out in collaboration with 11 institutions spread over the states of Assam, Nagaland, Manipur and Tripura, covering as of now 4 out of the 7 states in the north eastern region. 21 DBT Healthcare Laboratories have been set and diagnostic and research work initiated.

- *Research Grant to Support MD/MS Thesis.* (Sanctioned 2011. Amount: Rs. 450.00 lakhs Rupees four hundred and fifty lakhs only).
- The MD/MS Thesis Grant Scheme spread across all the seven NE States enters into its sixth phase in November 2013. It is directed towards human resource development in healthcare in the NE region to match with raising standards of health & value of novel research tools in Health research. The Medical College may involve collaboration with another institution or another department within the same institution having a capability of supporting research in modern biology to undertake studies. It is awarded twice a year and 77 candidates to date have been awarded the Grant.

.Activities During 2012-2013

- Successful conduct of Third Review and Business Meeting in Guwahati in June 2012.
- Logistics for three MD/MS Workshops were conducted by DBT in collaboration with INCLEN.
- Due action was taken on the recommendations of the Project Review Monitoring Committee. The Report was forwarded to DBT.
- A dedicated server and website for DBT NER Medical College Programmes was set up.
- An independent server has been installed for the DBT Nodal Cell to facilitate online application submission and processing for MD/MS Scheme and for infrastructure scheme.
- 15 completed theses written under the MD/MS Thesis Grant have been received to date.
- 60 applications (received for phase 5 MD/MS Thesis Grant) were processed and forwarded for due evaluation.
- 27 proposals (Phase II of *Development/Upgrading Infrastructure in Medical Colleges in North Eastern States of India*) were summarized and forwarded to DBT.
- Compiled and forwarded to DBT all Future Work Plans received from all PIs.
- Additional data for generating critique on status of individual projects were compiled.
- List of groups working within the same subject area were compiled for networking and expertise sharing (Virology 03, Hemoglobinopathies 03, Oncology 08, MTB 02, Toxicology 01, Pharmacology 01, Psychiatry 01, Transplant Immunology 01, Cytogenetics 02)
- Draft abstracts were requested and received from all PIs for possible publication in a special issue. The abstracts were forwarded to DBT.
- Funds for FY 2012-2013 released to all projects as per UC/SE.
- A total of 11 workshops/seminars were conducted by the 21 projects under DBT Nodal Cell till June 2012. It is worth mentioning that one programme reached out to school children & another was a video

conference with Dr Robert A Weinberg, founder of the Whitehead Institute for Biomedical Research, MIT, USA.

- The projects under the Cell generated during the period 11 Oral paper presentations; 7 papers in peer reviewed journals; 2 poster presentations both winning the Best Poster Presentation Award.

Administration**Head & Coordinator**

Prof A K Mukherjee, Dept of MBBT, Tezpur University

Joint Coordinator

Prof R C Deka, Dept of Chemical Sciences, Tezpur University

Scientist I

Dr G Maitra

Scientist II

Dr J P Saikia

THE ENGINEERING CELL

THE CELL

The Engineering Cell of the University, which was opened on 1 March 1995, is entrusted with the responsibility of developing the infrastructure in its campus at Napaam covering an area of about 262 acres of land. The following is a detailed description of its duties and responsibilities.

1. Allotment and execution of construction projects involving civil, electrical, water supply and sanitary works
2. Maintenance and repairing of buildings and roads
3. Maintenance of the power supply to the University campus
4. Maintenance of the water supply to all the buildings including hostels and the canteens
5. Preparation of agenda notes and minutes of the Building Committee meetings
6. Maintenance and development of the campus.

CONSTRUCTION ACTIVITIES

The following constructional activities were taken up and completed during 2012-13.

1. Central Water Supply Scheme Phase-II
2. Extension of the Academic Building of the Department of Civil Engineering
3. Construction of Residential Buildings for Medical Officers
4. Construction of Residential Buildings for Medical Staff
5. Construction of Office Buildings for the Engineering Cell and the Controller of Examinations
6. Improvement of existing internal roads
7. Construction of public toilets

ONGOING CONSTRUCTION WORKS

Construction of the following buildings was taken up during the year. The constructions should be completed during 2013-14.

1. Construction of a 482 capacity single bedded Boys' Hostel
2. Construction of a 300 capacity single bedded Girls' Hostel
3. Construction of a RCC Type-D Residential Building (1 Block=18 Units)
4. Construction of a RCC School Building for Kendriya Vidyalaya at the University Campus
5. Construction of RCC 3-storied Type-B Residential Building (2 blocks = 36 units)
6. Construction of a RCC 3-storied Type-C Residential Buildings (2 blocks = 36 units)
7. Extension of the Student Activity Centre
8. Extension of the Gymnasium
9. Extension of the Amenity Centre with ATM Counters
10. Construction of a Visitors' Waiting Room cum Reception Counter
11. Construction of an Academic Building for School of Humanities and Social Sciences

POWER SUPPLY

The Govt of Assam has sanctioned 2 MW of power to Tezpur University. This power will be released to the University by ASEB as per the load demand of the University. Currently the University is drawing 1069 KW (1.069MW) from the 132/33 KV Depota Grid Sub-Station of ASEB through a 13.50 KM long dedicated power line. This power is received at the University end through a 2 x 2.5 MVA, 33/11KV Sub-Station constructed by the University and is distributed through a 11KV H.T. Ring Main which is connected to 4 sub-stations of 2 x 315 KVA, 11KV/0.433 KV located at peak load centers inside the campus. During 2012-13, the total hours of interruptions in supply of power to the University was 221.50 hours out of which maintenance shut down availed by the University was 34 hours only. Considering the present crisis of power in the State of Assam, the duration of interruption of power was very less.

Tezpur University has installed and commissioned 4 (Four) Nos. of 500 KVA, 415 V, 50 Hz, silent AC generators for power supply to the entire University campus during interruption of power supply from ASEB.

WATER SUPPLY

Four deep tube wells, each 102 meters deep, associated with submersible pumps have been installed in the University campus to access ground water. The treatment plant consisting of aerator, flush mixture, sedimentation tank, filter unit, chlorination has been constructed for proper treatment of raw water.

Two overhead reservoir (OHR) of capacity 3.0 lakh liters and 3.50 lakh liters, respectively, have been constructed to store treated water. Water from the OHR reaches the consumer points through a pipe-line network under the gravity flow.

Presently requirement of water in the University campus is more than 6.50 lakh liters per day. The demand is likely to increase within a year with the addition of new hostels and dwelling units. There was no instance of interruption in supply of treated water during entire 2012-2013.

The second Water Treatment Plant is also functioning since June 2012.

PROPOSALS OF THE YEAR

Planning and designing of the following projects were taken up and construction during 2012-2013:

1. Construction of a RCC Academic Building for the Department of Physics
2. Construction of an Olympic standard swimming pool
3. Construction of a Central Lecture Hall Complex
4. Construction of a 1300 capacity Indoor Stadium
5. Sewerage and drainage systems

THE EQUAL OPPORTUNITY CELL

THE CELL

India is a country of diversity. It is a hub of different religions, castes and cultures. However, the Indian society is characterized by a highly entrenched system of social stratification. It is this social inequality that has created the barriers of denial of access to materials, cultural and educational, to the disadvantaged groups of society. An amelioration of the inequalities embedded in the Indian social system merits Equal Opportunity measures. The Equal Opportunity Cell functions as a Training and Development and Action Research Cell within Tezpur University and endeavors towards enhancing opportunities for the students hailing from the underprivileged sections of the society (e.g. *students belonging to the SC, ST, Minority, Differently Abled, Female category as well as those belonging to economically indigent section*). An important aspect of the Cell is to contribute towards overall social development through development of the student community.

Towards this end the Cell focuses on:

- Creating Awareness and Sensitization regarding Social, Political and Cultural factors that create barriers of inequality
- Building Capabilities towards Enhancement of Opportunities of Life
- Creating Awareness regarding Opportunities and Developing Capabilities among the underprivileged members of the society through Extension and Outreach Programmes.

TARGET GROUPS

- Students belonging to the underprivileged section of the society
- Community Members belonging to the underprivileged section of society

ACTIVITIES UNDER THE CELL

- Sensitizing and Awareness building Seminars and Workshops
- Capacity Building Training Programmes
- Action Research Projects
- Conduction Gender Budgeting and Equality Audit
- Scholarship Programmes
- Grievance Redressal

Programmes conducted during 2012-13

Sl No	Name of the Programmes	Target groups	Time	Sponsoring agency
1	CSIR/UGC NET Coaching Programme, 2012	CSIR: Depts of Chemical Science, Maths, MBBT, Physics, TU UGC: Depts of EFL, MCJ, EVS, Sociology, Cultural Studies, TU	12 October-12 November, 2013	Tezpur University
2	Certificate programme for communicative English for Army Wives (4 months)	Army wives	16 October, 2012-15 February, 2013	Tezpur University
3	Workshop on Action Research Methodology in Social Science	College teachers & Research Scholars	1-7 October, 2012	ICSSR-NERC, Shillong
4	Workshop on Research Methods in Social Science in Collaboration with OKDISCD, Guwahati	Faculty & Research Scholars	28 January - 3 February, 2013	ICSSR-NERC, Shillong
5	Capacity Building Programme for Faculty in Social Science	Faculty & Research Scholars of various colleges	14-27 March, 2013	ICSSR-NERC, Shillong

6	One-day Basic Training Programme on Human Rights	NSS Students, TU	23 March, 2013	NHRC, Delhi
7	Video –conferencing with American Consulate, Kolkata, Talk by Dr Lora Salman	Research Scholars of HSS, TU	2 May, 2013	NHRC, Delhi

Administration

Principal Investigator

Vice-Chancellor, Tezpur University

Education Officer

Nandarani Choudhury, MA (Cal), BEd, PGD in HRD, CTCE (British Council), CTSS (CESS, Bangalore)

Asst Education Officer

Bhanu P Gogoi, MSc (Dibrugarh), PhD (Dibrugarh)

THE HEALTH CENTRE

THE HEALTH CENTRE

The Health Centre of the University, which is located in the southeast corner of the campus, is providing health care services to students, faculty members and staff and their families. As of now the Centre has over 3500 beneficiaries, which include people currently working at our construction sites.

Current Staff position

Medical staff	Numbers
Doctors	3
Pharmacist	1
Lab technician	2
Nurse	2

Services /Facilities available

The Centre offers OPD services. Ten indoor beds are also available for initial care of indoor cases including emergency ones.

OPD services

The OPD timings

Session	Morning	Evening
April to September	8.30 AM to 12.30 PM	4 PM to 6 PM
October to March	8.30 AM to 12.30 PM	3 PM to 5 PM
Saturdays and Sundays: 10 AM to 12 NOON		

One Medical Officer is always available for 24 hrs. The cases requiring hospitalization are referred to the referral Hospitals at Tezpur. Ambulance service is available round the clock and is provided free of cost.

A stock of common medicines including life saving drugs are maintained and are supplied free of cost. Routine laboratory investigations are also done free of cost.

The Centre has one Autoanalyser (fully automatic) and one Hormone Analyser (Mini-Vidas). Ultrasound scanning and ECG facilities are also available at the Centre.

The Centre also keeps a set of appliances for disabled persons.

Empanelment of Specialists

Specialists of the following disciplines are empanelled:

- Dental Surgeon: 2 (two)
- Orthopedics Surgeon: 2 (two)
- Dermatologist: 1 (one)
- Ophthalmologist: (one)

Referral Hospitals

At Tezpur

All private hospitals in the Tezpur town are considered referral hospitals of the University.

At Guwahati

Following private hospitals are enlisted as referral hospitals of the University.

Hospitals	Specific disease
GNRC Hospital	Cardiac as well as Neurological
Down Town Hospital	General Specialty
International Hospital	General Specialty
Central Nursing Home, Beltola	Kidney related Surgical problem
Sri Sankardev Netralaya	Eye

Visit by Specialists

The University has engaged Specialists of different disciplines (Pediatrics, Obstetrics and Gynecology, Radiology) who regularly visit the Health Centre on different days of the week for the benefit of the University community.

Psychiatrists from LGBRIMH also visit the University regularly for offering counseling to the University community on stress related problems.

Important activities

The Medical Officers pay periodic visits to the University hostels and the canteens to assess the prevailing hygiene of the dining halls, water supply and the surroundings to prevent the outbreak of any waterborne diseases.

- An annual health checkup programme for the employees is organized every year.
- Fogging in the campus was done twice to prevent outbreak of Dengue.
- A Malaria Team (Tezpur District authority) visited the campus to carry out fever survey to prevent any possible outbreak of malaria.
- Pulse Polio Immunization camps were organized in the campus as per Govt directives.
- Bone mineral density test for elderly ladies was done in October 2012.
- The medical officers and staff of the Health Centre attended the flood relief camps.

Other activities

Dr (Mrs) J S Goswami delivered a talk on health and hygiene to NCC cadets on the National Integration Camp held at the University, 23 January, 2013.

A health checkup programme was organized for the students of Takshashilla Vidyapith and K V of the University during the concerned period.

Future Plans

Upgradation to 30 bedded indoor facilities

X-Ray facilities

CT scan and MRI facilities in collaboration with the Medical College, Tezpur

OPD facilities for outsiders

Regular vaccination programme for children.

THE HORTICULTURAL SECTION

THE HORTICULTURAL SECTION

The Horticultural Section

of the University landscapes and beautifies the University campus. An Assistant Horticulturist looks after the activities of the Section under the supervision of a faculty member of the University. He is assisted by one Multi Task Staff and 16 daily wage labourers. The horticultural activities during the concerned period were the following:

PLANTATION PROGRAMMES

A total of 1911 seedlings of different ornamental plants/shrubs and fruit trees were planted in different parts of the University campus, which include the VC's residence, the Administrative Building, the KBR Auditorium, the Guest House, the New C-type and B-type quarters, the water body locating in front of VC's residence, the boundary of University campus, parts of the Ring Road, and the Botanical Garden plot.

NEW DEVELOPMENTAL WORK

A new flower garden was developed in front of the Library Building (by developing about a 4500 sq.m lawn by planting about 280 RM hedge and ornamental plants of various types).

In addition to this, landscaping of the front of the New Building near the Council Hall (by developing a 130 sq m lawn by planting a 70 RM hedge). Development of the Botanical Garden (in about 10 bighas of land within the University campus) has also been started.

MAINTENANCE OF THE EXISTING TREES

Essential maintenance of each and every old tree standing on the campus was carried out.

CULTIVATION OF MUSTARD CROP

Mustard crop was cultivated during the concerned year in about 30 bighas land on the University campus.

MAINTENANCE OF THE EXISTING GARDENS

Essential maintenance of all the flower gardens which are located in the front of the Administrative Building, the Auditorium, the Guest House, the Community Hall, the Health Centre, the Student Activity Centre, Dept of Energy, Dept of Chemical Science, Dept of MBBT, Dept of Environmental Sciences, Dept of Mass Communication and Journalism, Dept of Business Administration, Academic Buildings I and II, School of Engineering, VC's residence, the Cafeteria, the Central Sophisticated Instrumentation Centre and Instrument Maintenance Facility, the Community Hall, the Chandraprabha Saikianee Bhaban, the Shopping Complex, the Day Care Centre, the Car Parking Zone near the Administrative Building, Takshashilla Vidyapeeth, and the Children Park, was carried out throughout the concerned year.

MAINTENANCE OF HOUSE PLANT POTS FOR INDOOR DECORATION

Essential maintenance was also carried out on all the house plant pots (about 800 in number) placed in the Administration Building, the Academic Buildings, the Library, the Guest House, the Community Hall, the KBR Auditorium, the Health Centre, the Student Activity Centre, the Chandraprabha Saikianee Bhaban and all other buildings of the University.

MAINTENANCE OF VERMICOMPOST PROJECT

About 13.34 quintals of vermi compost was produced during the concerned year.

MAINTENANCE OF THE UNIVERSITY NURSERY

The University has a nursery of its own, which has been the source of seedlings of ornamental and fruit trees of different types; shrubs; indoor plants and also seasonal flowers for the use of the University. Essential maintenance was carried out on the nursery throughout the concerned year.

OTHER ACTIVITIES

In addition to the above, the Horticulture Section carried out regular maintenance of on all parts of the University campus during the concerned period.

THE TEZPUR UNIVERSITY

INTELLECTUAL PROPERTY RIGHTS CELL

THE CELL

The Tezpur University Intellectual Property Rights Cell (TUIPR Cell), which was opened in 2009, is currently running its successful fifth year. Besides assisting the TU community in IPR related matters, the Cell also regularly conducts workshops, training and outreach programmes. The aim of such programmes is to introduce intellectual property (IP) consciousness to a wider audience representing different strata of the society. An outline of the activities carried out by the Cell during 2012-13 under the flagship of the MHRD IPR Chair by is presented below.

IPR IN UNIVERSITY CURRICULUM

IPR has been introduced as IDC in the University the Post Graduate curriculum. Forty nine students from the Schools of Sciences, Management, and Engineering successfully completed the course in Autumn 2011. In the year 2012, the student intake increased to ninety-four with students also from the School of Humanities. Considering the growing interest, the the Cell has decided to introduce the IPR course at undergraduate level as well from the Autumn 2013. The IPR course is also going to be offered in the near future for the benefit of both students and working people from other parts of the country.

IPR ASSISTANCE

The Cell has been taking initiatives to promote IPR in order that research activities at the University become more rewarding and self sustaining. During 2012-13 one MoU was signed between Tezpur University and Anjan Sen & Associates, Kolkata, the renowned IPR attorney firm, for assistance in filing patents.

During this period the Cell was successful in acquiring technical and financial support from PFC, DST-TIFAC for three innovations as patent applications from the University. Three innovations in the field of nano-biotechnology could also be routed to BPFC-DBT for obtaining patents. After the success of the previous year, three new patent and two copyright applications were received by Cell during 2012-13.

Besides assistance to the TU fraternity in the matters of IPR, the Cell has also been offering technical and related assistance to grassroot innovators from the nearby areas. Three patent applications from such grassroot innovators received Cell's assistance the previous year.

The Cell is also taking initiatives to formalise the approach towards IPR issues by formulating an institutional IPR Policy. The policy in its final form is awaiting formal approval. The policy will lay down guidelines for generation of patents, copyrights etc. in the event of commercialisation.

TRAINING/WORKSHOPS ON IPR AWARENESS

In order to generate awareness in the field of IPR within and outside the University, the Cell conducted the following during 2012-13 in addition to its regular outreach programmes:

A one-day workshop, *Capturing Innovations for IPR Protection in Tezpur University*, was held in Tezpur University on 8 August, 2012 in order to discuss the scope of innovation and its implementation through suitable IP protection. The workshop primarily targeted the upcoming researchers and innovators who are in search of a proper IP tool to protect his/her creations and inventions. Management of institutional intellectual property through right IP policy was one of the prime focuses of the workshop. A total of 35 people from the University (faculty members, researchers and students) participated in the workshop. The participants practically took part in the demonstration of prior art search. The Cell received a very large number of queries (regarding novelty and industrial applicability related issues) following the workshop, which showed that the event considerably raised the level of awareness among the researchers at the University.

Working towards its goal to introduce IPR to a larger society, the Cell organized (under the aegis of the Copyright Enforcement Advisory Council) a special training programme on Copyright & Trademark for law enforcing agencies such as the police and the judiciary (which interface with the stakeholders to ensure delivery of

equitable and timely justice) on 8-9 November, 2012. that interface with the stakeholders to ensure delivery of equitable and timely justice. A total of 51 Police and Judicial Officials and Prosecutors from the various states of the North East of India participated in the training with an overwhelming response. The participants requested the Cell to conduct in the future similar workshops on more specialized topics and case studies, and introduce IPR in the distance mode.

The Institution of Engineers (India), Assam State Centre, Guwahati and Tezpur University jointly organized a two-day regional workshop on IPR awareness in Electronics & Information Technology on 18-19 March, 2013 at the IEI, Guwahati. The aim of the workshop was to create awareness and develop deeper insights into the complex mechanism of creation, ownership and protection of Intellectual Property in areas like E & IT. The workshop was attended by a total of 54 participants from academia, working professionals, Judiciary and Police. Eminent experts from the Reliance Industries, C-DAC, and renowned IP firms like Anjan Sen & Associates and S. Majumdar & Co. deliberated in the workshop in addition to the MHRD IPR Chair Professor at Tezpur University, Prof Prabuddha Ganguli.

With an aim to bring the women grassroot innovators from across the North East to a single platform, the Cell organized a training programme at the University on 31 January, 2013. The programme primarily addressed issues related to the protection of indigenous designs. Prof Prabuddha Ganguli, who is an expert in the field, emphasized the necessity of appropriate tools of IPR to optimize economic output. He presented the essence of IPR to the women representatives. To maximize the effect of awareness the workshop was conducted in the local language. A very lively interaction took place in the post-lunch session after the presentation by Sri Uddhab Bharali, the renowned grassroot innovator from the region. A few of his commercially successful innovations were also demonstrated to the audience. 49 innovators from across the state participated in the programme. The workshop was successful in creating an operative framework for the protection of design related intellectual property by using appropriate tools of IPR.

SYMPOSIUM ON IPR

The Cell in collaboration with the Dept of Physics, organized a one- day symposium, *Recent Research Developments and the Role of IPR*, on 21 December, 2012 at the University. Focus of the symposium was the IPR in the world of scientific research. As resource person Dr R K Barman from the Patent Information Centre, Assam State Technology and Environment Council, Guwahati, focused on the importance of IPR in research and development with special reference to Physics. Around 46 participants registered on the Symposium. Paper and poster presentation in various research areas was part of the event. The symposium was sponsored by Assam Science Technology & Environment Council, Guwahati, Assam, and MHRD IPR Chair, Tezpur University

OUTREACH PROGRAMMES

The Cell has been regularly undertaking various outreach programmes at different places of the region to bring untouched areas into the IPR awareness. Two such events were organised in the year 2012-13:

One outreach programme on IPR awareness was conducted at NIT, Agartala on 10 August, 2012. This was done in collaboration with NIT, Agartala, and DST-TIFAC. Besides creating general awareness about IPR, the workshop tried to generate active consciousness about the importance of institutional IPR policies and transformation of R&D activities into commercial realities. 70 people from the institute participated in the programme.

The Cell organized a one-day workshop at Tripura University in collaboration with Equal Opportunity Cell, Tripura University on 21 March, 2013 with a motto to enhance institutional innovation. The event's prime focus was the role of intellectual property rights in promotion of innovation and research. Literature search including patent analysis for systematic R&D was another important issue addressed in the programme. A total of 75 people (faculty members, research scholars and students from the host University) attended the workshop.

VISITORS TO THE CELL

Dr R K Barman, Nodal Officer, PIC and Senior Scientific Officer & Head (i/c), S&T Division, ASTEC, Guwahati

Mr Uddhab Bharali, the renowned grassroot innovator from Assam

THE INTERNAL QUALITY ASSESSMENT CELL

THE CELL

The Internal Quality Assessment Cell has been established to regularly assess internal quality of the University. During the concerned period the following activities were carried out.

Two meetings were held during the financial year April 2012 to March 2013. Some of the issues discussed were:

1. Compulsory internships for Integrated (science) programs
2. Dean (R&D) along with the Dean of the respective school to visit the Departments and assess the research output by the Faculty
3. Book grant facility for faculty members

The Annual Quality Assurance Report (AQAR) for the period April 11 to March 12 was submitted to NAAC in the month of December 2012.

Five workshops were organized by IQAC for the faculty, the staff and the students of the University:

A half-day program on ERP and ORACLE was organized for the faculty and the staff in collaboration with Tata Consultancy Services, Kolkata, 13 June 2012.

Two student mentoring programs were held during February 21-23 and March 20-31, 2013. The program focused on Communication, Team Work, and Etiquette. It aimed at honing soft skills of students for dealing with job interviews and work place dynamics. The following faculty were associated with this program: Shravani Biswas (EFL), Basabi Gogoi (CODL), Papori Baruah (BA), Palash Pratim Dutta (Mech Engg), J K Sarma (Physics), Jaya Chakravarty(MCJ), Madhurima Goswami (CS), Manab Mandal (MBBT) and Chandana Goswami (BA).

Workshop for the faculty on soft skills held on 15 March 2013. The workshop focused on Communication skills, Attitude and Conflict handling.

Workshop for the faculty on research issues held on 19 March 2013. The workshop discussed:

Ethics in research [Moderator Prof S K Duloi, Speakers Prof Ramesh Deka and Prof S K Dutta]

Using the library's search facilities [Presentation by Dr Mukesh Saikia]

Impediments in research [Moderator Prof D Das, Speakers Prof A K Mukherjee and Prof Madhumita Barbora]

Understanding impact factor [by Prof Nayandeep Deka Baruah]

Experience of fellowship awardees [Moderator Prof P K Das]

Prof N S Islam was invited to handle queries regarding R&D activities.

The Cell has been regularly handling API cases with the help of the committees set up for the purpose.

REPORT FROM THE DEAN, STUDENTS' WELFARE

The University proudly reports that there was no incidence of ragging during the academic year 2012-2013. As per the recommendations of the Raghavan Committee (constituted by the Supreme Court of India) the University proactively published a booklet, *Towards a Ragging Free Tezpur University*, where the anti ragging measures of the University were explained to the students in clear terms. Furthermore, each and every student, whether old or new, had to give an undertaking that she or he would get no way involved in ragging, and that if found involved anyway she or he would remain liable to be legally punished. The Anti Ragging Committees, the Anti Ragging Squads, the Anti Ragging Cells at the hostels, and then the Departmental Anti Ragging Cells kept a constant vigil during the first few weeks of the new academic session. The committees also successfully organized a series of *Ice Breaking Sessions* between the junior and the senior students. At the same time a vigorous campaign was launched in order to make the students as well as the whole University community aware of the evils of and the severe legal punishment for ragging. The University is thankful to all the members of the community for their whole-hearted support in keeping it ragging free.

As per the Act and Statute of the University the 16th Students' Council was formed with representatives from each academic programme together with the best competitors competing in various major events in the last Annual Meet of the University. We have the privilege to record that the 16th Students' Council proved to be most active throughout and that it made an outstanding contribution to the students' welfare.

Apart from the sports events reported by the Sports Officer of the University the following activities are worth reporting:

- Ms Tulika Bhuyan, Ms Trishna Barman and Mr Prem Prakash Vedi from the Department of Electronics and Communication Engineering participated National Level AIU Student Research Convention 2012-2013 held at the Tata Institute of Social Sciences, Mumbai during 20-22 March, 2013 and won the Best Team Award. The team was led by Mr Nayan Moni Kakoty (Teacher-in-Charge), Assistant Professor, Department of Electronics and Communication Engineering.
- Ms Simona Tamuly from the Department of English & Foreign Languages and Ms Jyotisha Saikia of Department of Cultural Studies participated the State level Debate Competition Organized by North Lakhimpur College on 16 October, 2012.
- Ms Jyotisha Saikia, Ms Farhana Shabnam from the Department of Cultural Studies, and Arshad Hussain from the Department of Business Administration participated in the 1st All Assam Dr Santanu Sengupta Memorial Inter College Prize Money Debate Competition held on 2 May, 2013 at Sahityarathi Laxminath Bezbarua Bhawan, Chowikidinghee, Dibrugarh.
- Fifteen students from different departments participated in an interactive session with eminent journalist Mr Arnab Goswami, eminent journalist of the Times Now. The interactive session was organized by the *Sadın*, one of the leading Assamese weeklys on the occasion of its completion of 25 years, the GMCH Auditorium, Guwahati.

THE SPORTS SECTION

During the concerned year the Sports Section organized Inter Hostel Football, Cricket, Volleyball, and Basketball competitions and they were completed during the last week of May 2012 .

The XVI Annual Meet of the University was started in the month of August 2012 with Football, Volleyball, Basketball, Badminton and Table tennis Competitions. The concluding sessions were held during 21-23 February 2013 with Track and Field events, Cultural and Literary competitions.

Prof Amarjyoti Choudhury, Pro Vice Chancellor, lighted the main lamp and hoisted the University flag. Prof Choudhury received the torch from Sri Pankaj Kumar Borah, Assistant Director of Sports of the University. The torch was carried to the parade ground by Dr Bhobesh Nath, Mr Saubhik Mandal, and the Conveners & Captains of the wining teams.

Prof Choudhury also took salute of the march past contingent of teams from all the hostels of the University.

The oath was administered by Prof D Deka, Dean of Students' Welfare.

Mr Bhabajyoti Goswami, International Weight Lifting Referee and Sports Organizer, and Colonel M Rath Commanding Officer, NCC graced the occasion respectively as Chief Guest and the Guest of Honour. The unique Band Playing by SSB, Devendra Nagar added much to the grace of the occasion.

CHAMPIONS OF THE XVI ANNUAL MEET

- Best Player (Basketball, Men): *Pranjit Das (CSE)*
- Best Player (Basketball, Women): *Jahnabi Saikia (MBBT)*
- Best Player (Volley Ball, Women): *Sandhya Rani Gogoi (Chemical Sciences)*
- Best Player (Volley Ball, Men): *Amar Kumar Das (MBA)*
- Best Player (Football): *Haiheube Jeme (CSE)*
- Best Dancer: *Medha Aich (MCJ)*
- Best Singer: *Anuraag Baruah (Maths)*
- Best Literary Competitor: *Puneet Choudhury (MBA)*
- Best Lifter: *Dhrubajyoti Gogoi (Physics)*
- Best Fine Arts: *Debangshu Singha (Mech Engg)*
- Strongman of Tezpur University: *Dhrubajyoti Gogoi (Physics)*
- Champion of Champions (Arm wrestling: Men): *Pankaj Gogoi (Chemical Sciences)*
- Champion of Champions (Arm wrestling: Women): *Mumtaz Baruah (MCJ)*
- Man of the Match: *Arun Kumar Roy (CSE)*
- Best Baller: *Madhurja Sutradhar (CSE)*
- Man of the Series: *Siddhartha Guptam (CSE)*
- Mr Tezpur University: *Dhrubajyoti Gogoi (Physics)*
- Best Athlete (Women): *Ankita Borgohain (Mathematical Sciences)*
- Best Athlete (Men): *Akash Deep Biswas (MBBT)*
- Marathon Champion: *Brijesh Kumar (Mechanical)*
- Best Actress: *Upasana Saikia (MBA)*
- Best Actor: *Debajit Gogoi (BTech Mechanical)*
- Best Director (Drama): *Himjyoti Dutta (FET)*
- Best Commander (Women): *Rajashri Hazarika (EFL)*
- Best Commander (Men): *Ranjan Das (MCJ)*

CHAMPIONS AND RUNNERS-UP OF TEAM EVENTS OF THE XVI ANNUAL MEET

- Basket Ball (Women) Runners-up: *Pragjyotika Women's Hostel*
- Basket Ball(Women) Champion: *Dhansiri Women's Hostel*
- Basketball(Men) Runners-up: *School of Humanities and Social Sciences*
- Basketball(Men) Champion: *Com Science & Engineering*
- Volleyball(Women) Runners-up: *Bodoichila Women Hostel*
- Volleyball(Women) Champion: *Sobansiri Women Hostel*
- Volleyball(Men) Runners-up: *Dept of MBA*
- Volleyball(Men) Champion: *Research Scholars*
- Football Runners-up: *Mechanical Engineering*
- Football Champion: *Computer Science & Engineering*
- Cricket Runners-up: *Depts of Energy, MBBT, FET, Env Science*
- Cricket Champion: *Dept of Computer Science & Engineering*
- March-Past (Men) Champion: *Nilachal Men's Hostel*
- March-Past (Men) Runners-up: *Patkai Men's Hostel*
- March-Past (Women) Champion: *Subansiri Women's Hostel*
- March-Past (Women) Runners-up: *Dhansiri Women's Hostel*

THE SC/ST CELL

THE CELL

The SC/ST Cell was set up under the Notification No F 15-2/GA-II (SCT)/3638-A dtd 16.10.07. The Cell is headed by a Liaison Officer and is assisted by a supporting staff. The Cell supervises the reservation in recruitment and admission and takes care of the welfare of the Scheduled Caste and Scheduled Tribe (SC/ST) students and employees of the University.

OBJECTIVES OF THE CELL

- To supervise the implementation of the reservation policy for SC/ST students and employees of the University.
- To collect data regarding the implementation of policies in respect of admission, appointment to teaching and non-teaching positions at the University; to analyze the data showing the trends and changes towards fulfilling the required quota.
- To take up such follow-up measures for achieving the objectives and targets as laid down by Government of India and UGC.
- To implement, monitor continuously and evaluate the reservation policy in the University and suggest measures for ensuring the effective implementation of the policy and programmes of the Government of India.

FUNCTIONS

- Monitoring the admission of SC/ST students to various courses.
- Guiding the staff of the Student Services Branch about the rules of reservation and the fee concession.
- Maintaining liaison with the Social and Tribal Welfare officers in the State for obtaining scholarships extended to the SC/ST students.
- Preparing and furnishing the detailed enrolment list of SC/ST students to the Ministry of HRD/UGC every year.
- Settlement of un-disbursed amounts and sending the Utilization Certificates to sanctioning agencies.
- Conduct of pre-entrance coaching for AIEEE for SC/ST students.
- Conduct of remedial classes for SC/ST students.
- Dealing with the representations from the SC/ST students.
- Functioning as a Grievances Redress Cell for SC/ST students and employees.
- Maintaining a register of the details of employment of SC/ST candidates in various posts at the University.

THE ADVISORY COMMITTEE

The SC/ST cell has an Advisory Committee under the Chairmanship of the Vice-Chancellor with members from the teaching Departments and other stake holders.

THE COORDINATION COMMITTEE

The University has formed a coordination committee to organize and coordinate programmes on developing communicative skills in English and counseling in core courses for SC/ST/OBC and other Minority categories students. Additional care was taken during the year by each and every teaching Department of those students of these categories who needed help in their studies.

The SC/ST Cell has been strictly following the UGC guidelines, and organized the following programmes during 2012-2013:

SI No	Name of the programmes	Beneficiaries				
		SC	ST	OBC (NCL)	Minority	Gen
1	UGC/NET Coaching Programme	29	24	75	07	88
2	Yoga Coaching	49	18	93	21	119

Students from the following 9 departments took the CSIR/UGC NET coaching during the concerned year:

CSIR/NET Coaching: Chemical Sciences, Mathematical Sciences, Molecular Biology & Biotechnology, Physical Sciences.

UGC/NET Coaching: Cultural Studies, Environmental Sciences, Mass Communication & Journalism, Sociology, English and Foreign Languages

THE TRAINING AND PLACEMENT CELL

THE CELL

The Training and Placement Cell of the University is largely responsible for a need-based grooming of students, and then their placement. It is a real world fact that in order to transform a raw student into an employable graduate, several behavioral attributes need to be addressed in addition to the knowledge attained from the prescribed courses. Some of these attributes are a good communication skill, a positive attitude towards work, understanding of moral and ethical values, being aware of local and global scenarios and trends in relevant areas, prediction of future technologies, and the like. The Cell takes special care of these aspects and takes up appropriate measures to increase the employability of the students, particularly, those in the final year.

MAJOR PROGRAMMES ORGANIZED BY THE CELL DURING 2012-2013

Skill and Personality Development

- Initial Training on Personality Assessment Tests (conducted by Indian Army).
- Pre-Placement grooming sessions (conducted by Educational Officer, TU).
- Technical Updating Programme on Windows 8 (conducted by Microsoft India).
- Skills for Corporate Jobs Today (talk by GM, Microsoft).
- What Recruiters Look For in Freshers (conducted by Professional Trainers).

As part of the Industry-Academia Relationship building exercise, The Training & Placement Officer visited a few prospective recruiters at Bangalore in January 2013.

Internship

As in the earlier years, the Cell arranged summer internship opportunities for students to get hands-on exposure in various industries/organizations. A number of reputed organizations trained our BTech students during the concerned year. The organizations include the Refineries of the Indian Oil Corporation, Oil India Limited, Assam Petrochemicals Limited, Scooter India, North Eastern Railways, NEEPCO, C-DAC, IITs, Powergrid Corporation of India, Brahmaputra Valley Fertilizer Corporation. The SBI also engaged a large number of students from different streams as paid interns.

Placement Scenario

Despite the negative market trend and job cuts across the country in private sector organizations, the students of Tezpur University could maintain the University's good record of placement. In the current academic year 17 prestigious industrial houses recruited students of the University.

A list of companies that recruited our students during 2012-13 is presented in the Table below.

Recruitment During 2012-13

Name of the Organization	Discipline	No. of Students
Indian Army	BTech	(not declared yet)
Capgemini	BTech/MCA	18
Sony India	BTech/MCA	2
Software AG	MCA	4
KEC International	BTech	0
Unisys Global	BTech	3
Jindal Steel & Power	BTech	6
Asian Paints	MBA	1

ITC	MBA	2
C G Foods	MTech	4
Technosoft Consultancy Solutions	BTech/MCA/MTech	5
Broadcom	BTech	1
TCIL	MBA	3
Shriram Transport Finance Company	BTech/MBA	1
PRADAN	All PG Courses/BTech	7
Reliance Jio Infocom	BTech	3
Vodafone	MBA	2

Apart from the organizations listed above, a few more companies including *Star Cement, ABCI Infrastructures, IMS Learning Resources, Aviva Life Insurance, Dalmia Cement, Mahindra Finance, Dabur India, TERI, GSK Consumer Healthcare* and a few educational institutions have formally expressed their willingness to recruit from the University shortly.

The Year in Figures

STATISTICS: STUDENTS

Total	Male	Female	General		SC		ST		OBC/MOBC				PWD		SSS	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F
2794	1697	1097	835	555	234	117	98	100	469	267	-	-	14	6	47	52

STATISTICS: EMPLOYEES

TEACHING

Employees	As on 31.3.12	Joined during 2012-13	Left during 2012-13	As on 31.3.13
Professors	44	8	0	52
Associate Professors	51	7	10	48
Assistant Professors	99	21	7	113

NON-TEACHING

Employees	As on 31.3.12	Joined during 2012-13	Left during 2012-13	As on 31.3.13
Group-A	36	7	1	42
Group-B	41	5	0	46
Group-C	98	7	2	103
Group-D	72	0	6	66

STATISTICS: SC/ST EMPLOYEES FEMALE/MALE EMPLOYEES (as on 31 March 2013)

TEACHING

Employees	SC	ST	Female	Male
Professors	1	1	9	43
Associate Professors	8	3	3	45
Assistant Professors	19	10	28	85

NON-TEACHING

Employees	SC	ST	Female	Male
Group-A	4	3	7	35
Group-B	8	3	7	39
Group-C	16	12	11	92
Group-D	11	3	5	61

